



Research Activity

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We report on the first year of the *Marie Curie Research and Training Network* FLAVIA*net*. The report starts with summaries of the research achievements of the 11 nodes in Sect. 1. In Sect. 2 we list the publications of our network. Sect. 3 describes the presentation of our scientific results at international conferences and describes our networking activity. Finally we conclude.

1 Research Achievements

The research of the 11 FLAVIA*net* nodes is organised in 6 working groups. In this section we describe the scientific activity of the nodes with emphasis on the relation to the working groups and to milestones defined in Annex I of the FLAVIA*net* contract.

Node No. 1: Spain-V (Universitat de València Estudi General [UVEG]) Our research has covered milestones 1–3, 6–17 and 19. Different aspects of meson and baryon interactions at low energies have been studied (milestone no. 1) [1–6]. In a joint work with the Vienna and Bern nodes the two-flavour $O(p^6)$ mesonic chiral Lagrangian has been revisited [7] and first results on the strange quark mass contributions to $SU(2)$ LECs at the two-loop level were presented [8]. A new method to determine the LECs of ChPT at NLO in $1/N_C$ has been presented and L_8 and C_{38} have been estimated [9] (milestone no. 2). Together with the Germany-South node, progress has been achieved in the comprehension of the resonance saturation of $SU(3)$ LECs at the one-loop level [10, 11]. In collaboration with the Switzerland and Germany-North nodes, we are pursuing a lattice determination of the LECs of ChPT, including also the weak interactions, using Ginsparg-Wilson regularizations and finite-size scaling techniques in the ϵ -regime. We are currently studying meson current correlators at different volumes and lattice spacings [12]. A computation of the chiral condensate through a finite-size scaling study on the lattice is also in progress [13]. Lattice calculations of light-quark masses and decay constants with twisted-mass fermions have been performed in collaboration with DESY and INFN [14, 15] (milestone no. 3). Our lattice activity also includes a fully-dynamical study of hyperon-nucleon scattering [16] and the analysis of quenched-penguin and charm effects on the $\Delta I = \frac{1}{2}$ rule and ϵ'/ϵ [17–19] (milestone no. 9).

In collaboration with Marseille, a multi-scale analytical technique is being applied to the calculation of the muon magnetic anomaly $g - 2$ (milestone 6) and the $K_{\ell 3}$ form factor $f_+(0)$ at the 2-loop level (milestone no. 7). Radiative corrections [20, 21] to $\pi/K \rightarrow e\bar{\nu}_e[\gamma]$ have been studied at $\mathcal{O}(e^2 p^4)$. The interplay between form-factors and QCD constraints in the case of the radiative pion decay has also been explored [22]. The most recent Babar and Belle data have

been used to improve the V_{us} determination [23–25] and update other Standard Model tests from τ decay [26–28] (milestones no. 7,16).

The physics potential of a future Super-B factory (milestones no. 10,11,14–16) has been analyzed in collaboration with other FLAVIANet nodes [29]. Some supersymmetric flavour scenarios have been studied, together with the INFN node [30] (milestones no. 17) and constraints on new-physics sources of CP violation have been obtained [31, 32] (milestones no. 13,19). The last developments of the Monte Carlo event generator PHOKHARA (milestone no. 12) have been presented in [33]. Different corrections to high-energy processes within and beyond the Standard Model have been also studied [34–38]. Some members of the Valencia node are currently working within the Babar collaboration at the SLAC B Factory.

Node No. 2: Spain-B (Universitat Autònoma de Barcelona [UAB]) The research node 2 has been involved in most of the FLAVIANet tasks. For example, studies on V_{us} and QCD parameters were conducted in [23–25] (milestone no. 7 and 3), B semileptonic decays were studied in [42, 43] (milestone no. 11) and the problem of matching Regge behavior to perturbation theory was considered in [44] (milestone no. 3). In [45] a connection between resonance saturation and Pade theory was pointed out (milestone no. 2). Several articles which studied aspects of non-leptonic B decays within the Standard Model and in Supersymmetry are [46–48] (milestones no. 10, 14 and 15). How to use $\Upsilon(1S)$ decays to extract α_s was analyzed in [49], while [50] was devoted to the nucleon-nucleon potential (milestone no. 4). Some aspects of baryon physics were studied in [51, 52] (milestone no. 4,13) and, in connection with the lattice, in [16]. The usefulness of the decay $K^+ \rightarrow 3\pi$ for ϵ'/ϵ was pointed out in [53] (milestones no. 8,9 and 13), and for low-energy $\pi - \pi$ scattering in [54] (milestones no. 1,2). The gluon content in η and η' mesons was considered in [55] (milestone no. 4). Finally, the collaboration of the experimental group at Univ. of Barcelona with the Babar experiment produced numerous studies of different aspects of B, D and K meson physics [56–61] (milestones no. 4,6, 10,13 and 14). More details may be found in the list of publications.

Node No. 3: UK (University of Durham [UDUR]) The UK node has contributed to the mission of Working Groups 1 [67–70], 2 [29, 42, 43, 62, 71–80], 3 [81–89], 4 [90–96] and 5 [63, 97–106] and milestones 1-5, 7-11, 13-15 and 17-19.

Lattice calculations using partially twisted boundary conditions of Ref. [99] have proved an efficient method for determining hadronic electromagnetic and weak form factors as a function of momentum transfer. Using new high precision data on $B \rightarrow \pi$ semi-leptonic decays, a model independent value for the magnitude of the CKM element V_{ub} is extracted [78], which disagrees by 2σ from the Heavy Flavour Averaging Group result using inclusive decays. Using lattice data to fix the form factor relevant to the same semi-leptonic decay, similar conclusions are reached in Ref. [42]. The ability to discover new physics signatures in heavy flavour decays depends critically on the precision with which Standard Model physics predictions can be made. In Ref. [77] the branching ratios, CP and isospin asymmetries in the radiative decay of B's to vector mesons, V, in $B_{u,d,s} \rightarrow V\gamma$ are calculated not just including QCD factorisation results, but using light-cone sum rules to go beyond this. This sets benchmarks for new physics searches.

In Ref. [93, 96] the behaviour of the $\bar{q}q$ condensate as a function of quark mass is determined in strong coupling modellings of QCD based on solutions of the Schwinger-Dyson equations and from lattice results.

One of the highlights of recent high precision studies of heavy flavour decays is the discovery of new and unexpected hadrons. This has led to the discussion in Ref. [85, 88] of how to resolve what we do not know. Dalitz plot analysis of the favoured $D^+ \rightarrow K^- \pi^+ \pi^+$ decays with 53,000 events from the FOCUS experiment provide a dramatic testing ground for our understanding of hadron dynamics. The analysis presented in Ref. [87] shows these data are dominated by two body interactions consistent with all known data on the $K\pi$ final state, but at a greater level of precision.

Node No. 4: Germany–South (Universität Karlsruhe (TH) [UniKarl]) The research of the node addressed milestones no. 3,5,10 and 13–18, which span the topics of all working groups. In [107, 108] we have determined the strong coupling constant α_s and the charm and bottom quark masses to four-loop accuracy (milestone no. 3) from e^+e^- scattering into hadrons. Future determinations of the top mass were addressed in [109]. The determination of electric and magnetic baryon form factors via baryon pair production through the radiative return was studied in [110]. The prime activity of the node were studies of various aspects of weak B decays in and beyond the Standard Model and thus took place in working group No. 2: Calculations within the Standard Model dealt with form factor determinations from light-cone sum rules [111] (milestone no. 5), inclusive semileptonic B decays [112] and various calculations of B decay amplitudes into two light hadrons. Using methods of soft-collinear factorisation we derived new results in the next-to-leading order (NLO) of QCD [113, 114] and made first steps into the next-next-to-leading order (NNLO) [115] (milestone no. 10). Systems involving two heavy quarks can be treated with non-relativistic QCD (NRQCD); new higher-order corrections were obtained in [116–118]. Analyses beyond the Standard Model either pursued generic, model-independent constraints on new parameters or focussed on either of two concrete scenarios of new physics: the Minimal Supersymmetric Standard Model (MSSM) and the Littlest Higgs Model with T parity. $b \rightarrow c$ transitions [119], $B \rightarrow K\pi, \pi\pi$ decays [120] (milestone no. 14), $B-\bar{B}$ mixing [121, 122] (milestone no. 15) and τ decays [123] (milestone no. 16) were studied in a model-independent way. We studied both the impact of the recent measurements of $B_s-\bar{B}_s$ mixing and $D-\bar{D}$ mixing and the implications of a potential tension in global unitarity triangle fits on the supersymmetric parameter space [124–126] (milestones no. 14,15 and 17). In [127] the boundary condition of a particular supersymmetric GUT model was considered (milestone no. 17). The papers [128–131] comprise detailed studies of quark and lepton flavour physics in the Littlest Higgs Model with T parity (milestone no. 18). Our node is also involved in experimental activity at e^+e^- colliders and the CDF detector of the Fermilab Tevatron: Currently an improved determination of the hadronic contribution to the anomalous magnetic moment of the muon ($g_\mu - 2$) and of the running fine structure constant at the Z^0 pole $\alpha_{em}(M_Z^2)$ are achieved using new hadronic cross section data obtained at the e^+e^- particle factories DAΦNE (experiment KLOE) and PEP-II (experiment BaBar) via the Radiative Return method [61, 132–134]. Our CDF group measured the width difference among the two mass eigenstates of the B_s meson.

Node No. 5: Italy (Istituto Nazionale di Fisica Nucleare [INFN]) The highlights of the research activity of the node include: **I.** The production of extensive unquenched simulations of $N_f = 2$ twisted-mass Wilson fermions (with several values of the light quark masses) with the purpose of extracting continuum hadronic quantities extrapolated at the physical pion mass (milestones n. 8,9,11). Phenomenological applications of these simulations relevant for Kaon, charm and B-physics have also been started. This research is carried out by members of the node within the ETM Collaboration [14, 15, 143]. **II.** Determination of the CKM matrix elements, analysis of rare B and K decays and of $D-\bar{D}$ mixing in the SM, in motivated new physics models (such as low-energy supersymmetry) and in general model-independent approaches [30, 126, 144–147] (milestones n. 14-18). **III.** Analysis of recent data collected by KLOE and other low-energy experiments on semileptonic K decays. Evaluation of combined averages for all the quantities relevant to the extraction of V_{us} and corresponding global estimate of this fundamental SM parameter [148, 149] (milestones n. 7-8). **IV.** Development of effective field theories of QCD with applications to the physics of heavy meson decays, heavy quarkonium, and quark-gluon plasma. Analysis of the newly observed mesons with open and hidden charm and investigations in heavy meson spectroscopy [49, 64, 150, 151] (milestones n. 3,4,5). **V.** Four-quark interpretation of the newly observed heavy mesons and corresponding development of a new spectroscopy [152–154] (milestone n. 4). **VI.** Improved determination of the hadronic contribution to $(g-2)_\mu$ [133] (milestone n. 6).

Node No. 6: Poland (University of Silesia [Univ. of Silesia]) The activity of the Polish node concentrated mainly on the realisation of the milestones number 6,10,12,14,15 and 16. Two meetings of the working group 6 were co-organised. The meetings gathered not only physicists from FLAVIANet, but a wider group working actively in the field covered by working group 6. Calculation of the radiative corrections relevant for luminosity monitoring at meson factories and construction of necessary software tools was a subject of papers [162–164] (milestone no. 12). In [163] Mathematica program for automatic construction of Mellin-Barnes representations of planar Feynman integrals is given. It builds one loop tensorial and up to second rank multi-loop tensorial integrals, and multi-loop scalar integrals. In [162] some details concerning summations of simple QED residues coming from Mellin-Barnes representations are given. In [164] two loop radiative corrections to massive Bhabha scattering in QED for heavy fermions are calculated. They include calculation of box diagrams in approximation $m_e^2 \ll m_f^2 \ll s, t, u$. Various aspects of the B - decays were covered in papers [165–168] (milestones no. 10,14,15). The article [165] is devoted to presenting and describing the first estimate of the $B \rightarrow X_s \gamma$ branching ratio that includes $O(\alpha_s^2)$ QCD corrections. The article [166] presents the calculation of 3-loop contributions from the 4-quark operators to the $b \rightarrow s \gamma$ transition in the limit of heavy charm quark ($m_c \gg m_b/2$). These results together with the BLM approximation form the basis for the interpolation in m_c and a detailed phenomenological analysis that was summarised in [165]. The article [167] contains a description and results of the evaluation of 4-loop anomalous dimensions for renormalisation of the Wilson coefficients in the effective theory that arises from the Standard Model after decoupling the heavy electroweak bosons and the top quark. This is the final anomalous dimension computation that was needed for the $O(\alpha_s^2)$ QCD corrections to $B \rightarrow X_s \gamma$. The

paper [168] summarises the results of [165–167]. Papers [110, 169] are devoted to studies based on the radiative return method (milestones no. 6,12). In [110] it was shown how to extract baryon form factors using radiative return method and information about baryon decay products, while in [169] a short review of the research program based on the radiative return method was presented. In [170] the status of the TAUOLA and PHOTOS programs was presented with emphasis on multi-pion τ decays and radiative corrections to B - decays (milestones no. 10,12,16).

Node No. 7: Nordic (Lund University [ULUND]) The research of the node addressed milestones no. 1–3,6-7,10,14,15, which span the topics of working groups 1,2,4 and 5.

In [171–175] we studied various aspects of soft effects in B and D decays. This included the effects of chiral loops and nonfactorizable effects in several decays, this work took place in WG2 (milestones no. 14 and 15).

The work on the light-by-light contribution to the muon anomalous magnetic moment has been reviewed [65, 66] and the various calculations recalculated numerically and compared in a new way [65] (milestone no. 6). A lot of work has been devoted to NNLO calculations in Chiral Perturbation Theory. These calculations have been reviewed in [176] and have also been extended considerably during the reporting period. A bit of work was done for finite volume corrections at two-loop order [177, 178], (WG5 and milestone no 2). A lot of effort has been devoted to masses and decay constants in partially quenched Chiral Perturbation Theory as well as on how to evaluate here the eta mass and electromagnetic effects [179–182] This research has contributed to milestones and WG4 and WG5, milestone no. 2 and 3. An overall review of ChPT in the meson sector and how this is relevant for lattice QCD was also done [183]. In particular the quark mass dependence of $f_+(0)$ and meson masses has been elucidated here. Relevant for WG 1 and 5, milestones 2 and 7. In the same area preliminary results for isospin breaking at two-loop order for this quantity have been done [184]. Finally, in a major step for the study of quark masses and meson-meson interaction the calculation of $\eta \rightarrow 3\pi$ at NNLO was done and first numerical results obtained [185].

In the Helsinki group the analysis of coupling constants of the πN interaction has continued [186, 187] relevant for milestone no. 2. The Helsinki lattice group has concentrated on studying the B_S meson energy spectrum for S -, P -, D - and F -waves and also their first radial excitations. Particular attention has been paid to the P - and D -wave spin-orbit splitting [188]. To check the stability of the results several different sets of lattice configurations were used. In addition increasing amounts of smearing were introduced. This work contributes to milestone no. 4

Node No. 8: France (Centre National de la Recherche Scientifique [CNRS]) *In the strong sector of the Standard Model*, a framework (Resummed Chiral Perturbation Theory) has been developed to cope with potentially significant differences between the chiral limits of two and three massless flavours and applied to the current data on low-energy $\pi\pi$ and πK scatterings [195, 196] (milestone 1). In order to determine strong low-energy coupling constants of the strong chiral Lagrangian within Resonance Chiral Theory, the two current approaches for spin one particles (vector and antisymmetric tensor) have been related to provide a more general class of effective Lagrangians [197, 198]. Two-loop three-flavour chiral perturbation theory has been investigated,

with a determination of the η' contributions to the chiral low-energy constants, and a simplified representation for the pion mass [199] (milestone 2). Several aspects of hadron spectroscopy have been studied (milestone 4). An integral equation for the quark gauge invariant two-point Green's function was studied and solved in a well-defined approximation in order to yield the quarkonium spectrum [200]. The width of several η_b excitations into two photons has been determined using heavy-quark spin-symmetry, leading to model-independent relations [201]. In addition, hadron spectroscopy was considered in relation with lattice simulations. Baryon wave functions and diquark correlations were studied on the lattice in both the Coulomb and Landau gauge [202, 203]. The Δ -resonance parameters were proved to be obtainable from current lattice simulations [204]. Results were also obtained on the infrared behaviour of the gluon and ghost propagators in the Landau gauge, contradicting usual assumptions [205, 206].

In the weak sector of the Standard Model, an ongoing collaboration with DESY-Zeuthen node has provided lattice estimates for the Standard Model matrix elements relevant for neutral kaon mixing and those of electroweak penguin operators which give the dominant $\Delta I = 3/2$ contribution to direct CP violation in $K \rightarrow \pi\pi$ [202, 207]. Together with Univ. of Rome, an estimate of the $B \rightarrow K^*\gamma$ form factor has been obtained from quenched lattice simulations [208] (milestones 9 and 14). Several aspects of nonleptonic and semileptonic B decays have been covered (milestones 10 and 11). The question of isospin breaking in the yield of heavy meson pairs in e^+e^- annihilation near threshold has been studied for $B-\bar{B}$, $D-\bar{D}$ and $K-\bar{K}$ [209]. The problem of the Isgur-Wise functions to orbitally excited B mesons in B semileptonic decay to charm has been carefully formulated [210, 211]. Within a relativistic quark model, a relation has been found between the Light Cone Distribution Amplitudes and the Shape function of B mesons [212]. The parameters describing $B_{d,s}-\bar{B}_{d,s}$ mixing has been studied in and beyond the Standard Model, including both chiral corrections and the lowest-lying scalar heavy-light excitations, with significant implications for lattice extrapolations [213]. For penguin-mediated B -decays, in particular into $K^{(*)}\bar{K}^{(*)}$, the increasing information on B_d decay rates and CP-asymmetries can be used together with QCD factorisation and flavour symmetry to provide sharp SM predictions for B_s decays [48, 214]. A critical analysis of Bayesian statistics has been performed for the extraction of the CKM angle α , showing by both explicit calculations and frequentist approach that Bayesian statistics may lead to unphysical conclusions [215] (milestone 13).

Beyond the Standard Model, the signals of alternatives to supersymmetric models have been studied for different flavour processes (milestone 18). The $\Delta S = 2$ matrix elements required to study neutral kaon mixing in extensions of the standard model were calculated on the lattice [202, 207]. The implications of a single Universal Extra Dimension were worked out for FCNC B_s and Λ_b transitions [146] and rare $B \rightarrow X_s\tau^+\tau^-$ and $B \rightarrow K^{(*)}\tau^+\tau^-$ decays [216]. The implications of non-standard couplings of fermions to W and Z were analysed within the framework of effective theories, with a complete NLO analysis of experimental constraints on these modified couplings [217, 218] and a particular emphasis on the recent results obtained on $K_{\ell 3}$ decays based on a dispersive representation [219–221]. Constraints on new-physics contributions for $\Delta F = 2$ contributions were extracted from the available data within a Bayesian approach [145] (milestone 19).

Several reviews have been written, some on the complementarity between Chiral Perturbation Theory and lattice simulations [222, 223], others on $(g-2)_\mu$ [224, 225].

Node No. 9: Switzerland (Universität Bern [UBERN]) The research of the node addressed milestones no. 1,2,3,5,14,15 and 18, which span the topics of all working groups. Experience with the Domain Decomposition Hybrid Monte Carlo (DD-HMC) algorithm was extended over a wide range of parameter values [226,227]. Lattices of sizes 48×24^3 and 64×32^3 , with lattice spacings from 0.05 to 0.08 fm, were simulated at sea-quark masses as light as 20–25 MeV, using the Wilson (and Wilson non-perturbative improved) quark actions. Masses and pseudoscalar constants of the light mesons were computed and a dependence on the light-quark mass very much as predicted by chiral perturbation theory was obtained (milestone 2 and 3).

In [8] a general method to perform the matching of chiral $SU(2) \times SU(2)$ to $SU(3) \times SU(3)$ at two-loop order was developed and applied to the low energy constants at order p^4 . This will be of relevance for the lattice community (milestone 2).

An isospin breaking part in the decay K_{e4} which was overlooked so far has been identified. It brings theory and K_{e4} experiment performed by the NA48/2 collaboration at CERN into agreement (milestone 1).

The NA48/2 members of our node have: made an analysis of the charged kaon data collected in 2003 and 2004; accumulated a large $O(10^5)$ sample of $K \rightarrow e\nu$ events; performed R&D work towards the realisation of an experiment to measure $K^+ \rightarrow \pi^+\nu\bar{\nu}$ at the SPS.

The NNLL matrix elements of the dipole operator in the $\bar{B} \rightarrow X_s\gamma$ decay have been calculated. This, combined with other calculations at NNLL precision, led to the first NNLL prediction of the $\bar{B} \rightarrow X_s\gamma$ branching ratio which increased the high sensitivity of this observable to new physics significantly [165] (milestone 15). In [228] the charm quark mass dependence of the matrix element associated with the electromagnetic dipole operator was calculated. This was a missing ingredient for the NNLO branching ratio for $B \rightarrow X_s\gamma$. NNLO corrections to the hard-scattering kernels entering the QCD factorization formula for $B \rightarrow K^*\gamma$ were also computed [229], deriving complete results for the dipole operators O_7 and O_8 , and partial results for O_1 valid in the large β_0 limit. Large perturbative logarithms in the hard-scattering kernels were identified and resummed using soft-collinear effective theory. (Milestone 14 and 15).

The physics case of a Super Flavour Factory has been discussed in [29].

The supersymmetric large $\tan\beta$ corrections to $\Delta M_{d,s}$ and $B_{d,s} \rightarrow \mu^+\mu^-$ have been revisited [230] (milestone 14), and a bound on minimal universal extra dimensions from $B \rightarrow X_s\gamma$ derived [231] (milestone 18). In [232] it has been pointed out that the precision measurements of the $Z \rightarrow b\bar{b}$ pseudo observables imply that in models with minimal-flavor-violation the sign of the flavor-changing Z -penguin amplitude is identical to the one present in the standard model.

The estimation of the rare K -decay matrix elements from $K_{\ell 3}$ experimental data is extended beyond leading order in Chiral Perturbation Theory and the uncertainties on the $K^+ \rightarrow \pi^+\nu\bar{\nu}$ and $K_L \rightarrow \pi^0\nu\bar{\nu}$ matrix elements are reduced by a factor of about 7 and 4, respectively, and similarly for the direct CP-violating contribution to $K_L \rightarrow \pi^0\ell^+\ell^-$ [233] (milestone 14).

Node No. 10: Austria (Universität Wien [UNIWIEN]) The research of the node was related to the topics of working groups no. 1,2 and 4. The work of the Viennese group of this node addressed milestones no. 1,2,7, and 8: In [242] we have completed the analysis of meson resonance contributions to chiral low-energy constants of order p^4 by including all quark-antiquark bound

states with orbital angular momentum ≤ 1 . In [7] it was shown that the number of previously known terms in the mesonic chiral Lagrangian of order p^6 in the two-flavour sector can be reduced by at least one from 57 to 56 by providing an explicit relation among the operators. The progress in determining coupling constants of mesonic chiral Lagrangians was reviewed in [243]. A discussion of isospin violating effects in the scalar form factors of $K_{\ell 3}$ decays and a detailed numerical analysis of electromagnetic contributions to $K_{\mu 3}$ decays have nearly been completed. The papers of the Slovenian branch of this node were related to milestones no. 10,11,13,14 and 15: Motivated by recent experimental results on charm physics, the implications of the updated constraints on new physics in rare charm meson decays have been investigated [244]. In [173] we have calculated chiral loop corrections for the weak decays of B meson to positive and negative parity charmed mesons within a framework which combines heavy quark and chiral symmetries. The impact of the lowest-lying positive parity heavy mesons on the determination of the Isgur-Wise functions was also investigated. A review on D -meson physics was published in [245] and recently a PhD-thesis on the role of resonances in heavy meson processes within the standard model and beyond [246] was finished. Using soft-collinear effective theory, all semi-inclusive hadronic $B \rightarrow XM$ decays (an energetic light meson M recoils against an inclusive jet X) near the endpoint were described at leading order in $1/m_b$ in [247]. The present status of the determination of unitarity triangle angles was reviewed in [248, 249]. Possibilities of probing minimal flavour violation at the LHC were discussed in [250].

Node No. 11: Germany–North (Stiftung Deutsches Elektronen Synchrotron [DESY]) The research of the node has largely concentrated on working groups 4 and 5 with influence on working groups 1,2,3. Work has been carried out to reach milestones no. 2–4, 7–9, 11, 14–18.

Open questions in D -meson semileptonic decays have been discussed and the necessary steps needed to answer them have been identified [211]. The isospin and $SU(3)$ breaking, as well as electromagnetic interactions in the Chiral Perturbation Theory (ChPT) with the strange quark have been extensively studied [251–253] and very useful reviews on ChPT and hadronic atoms have been published [223, 254, 255]. Moreover, we propose an effective field theory framework for the extraction of the S -wave $\bar{K}N$ scattering lengths from the simultaneous analysis of the experimental data on kaonic hydrogen and kaonic deuterium spectra. The determination of mass and width of the Δ resonance from a computation of the energy spectrum in a finite volume by means of lattice QCD has been explored.

In relation to many milestones, lattice gauge theory formulation and methodology has to be refined as a major activity. In particular ChPT including lattice spacing effects has been studied [256–258], which is relevant for reaching milestones 2–4 and an automation of perturbation theory in the QCD-coupling on the lattice has been pursued [259] with a particular eye on the determination of α_s (milestone 3). Domain wall fermions were investigated perturbatively [260] and numerically [261]. The twisted mass formulation of lattice QCD was investigated [143] and applied to extract light quark masses and strong low energy constants in the $N_f = 2$ theory [14, 15] (milestones 2,3). Also the determination of $|V_{us}|$ from leptonic Kaon decay rates was pursued (milestone 7). The non-perturbative renormalization of four-fermion operators for K-physics [262] and B-physics [263] provides a basis for future determinations of B-factors in

the systems. In a preparation for many applications in B-physics, HQET on the lattice has been developed and refined [263–269] and reviewed for a larger community [270]. Work on the non-perturbative renormalization [266] of spin-dependent heavy quark potentials and the computation of the bare potentials on the lattice [271] has provided input for WG3.

2 Publications

The FLAVIANet members wrote the scientific papers listed below during the reporting period. Only papers which are published or submitted for publication are listed. Publications unrelated to the topics mentioned in Annex I of the FLAVIANet contract are not included. Experimental papers are only listed if FLAVIANet members were involved in the presented analyses. We list joint publications involving several FLAVIANet nodes in Sect. 3.4.

- [1] J. A. Oller, L. Roca, and C. Schat, *Improved dispersion relations for $\gamma\gamma \rightarrow \pi^0\pi^0$* , arXiv:0708.1659 [hep-ph].
- [2] J. A. Oller and L. Roca, *Pseudoscalar meson masses in unitarized chiral perturbation theory*, *Eur. Phys. J. A* **31** (2007) 534–536.
- [3] J. A. Oller and L. Roca, *Scalar radius of the pion and zeros in the form factor*, *Phys. Lett.* **B651** (2007) 139–146, [arXiv:0704.0039 [hep-ph]].
- [4] J. A. Oller, M. Verbeni, and J. Prades, *Meson - baryon effective chiral Lagrangian at $O(q^3)$* , *JHEP* **09** (2006) 079 (Err.), [hep-ph/0701096].
- [5] L. S. Geng, E. Oset, L. Roca, and J. A. Oller, *Clues for the existence of two $K_1(1270)$ resonances*, *Phys. Rev.* **D75** (2007) 014017, [hep-ph/0610217].
- [6] J. A. Oller, J. Prades, and M. Verbeni, *Aspects of strangeness -1 meson baryon scattering*, *Eur. Phys. J. A* **31** (2007) 527–533, [hep-ph/0609065].
- [7] C. Haefeli, M. A. Ivanov, M. Schmid, and G. Ecker, *On the mesonic Lagrangian of order p^6 in chiral $SU(2)$* , arXiv:0705.0576 [hep-ph].
- [8] J. Gasser, C. Haefeli, M. A. Ivanov, and M. Schmid, *Integrating out strange quarks in ChPT*, *Phys. Lett.* **B652** (2007) 21–26, [arXiv:0706.0955 [hep-ph]].
- [9] I. Rosell, J. J. Sanz-Cillero, and A. Pich, *Towards a determination of the chiral couplings at NLO in $1/N_C$: $L_8^{(r)}(\mu)$* , *JHEP* **01** (2007) 039, [hep-ph/0610290].
- [10] J. Portoles, I. Rosell, and P. Ruiz-Femenia, *Vanishing chiral couplings in the large- N_C resonance theory*, *Phys. Rev.* **D75** (2007) 114011, [hep-ph/0611375].
- [11] J. Portoles, *Large- N_C estimate of the chiral low-energy constants*, hep-ph/0702179.
- [12] F. Bernardoni and P. Hernandez, *Finite-size scaling for the left-current correlator with non-degenerate quark masses*, arXiv:0707.3887 [hep-lat].

- [13] L. Giusti and S. Necco, *Spontaneous chiral symmetry breaking in QCD: A finite-size scaling study on the lattice*, *JHEP* **04** (2007) 090, [hep-lat/0702013].
- [14] B. Blossier *et al.*, *Light quark masses and pseudoscalar decay constants from $N_f = 2$ lattice QCD with twisted mass fermions*, arXiv:0709.4574 [hep-lat].
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3 Conferences, Workshops and General Networking

The FLAVIANet nodes have organised several events devoted to common research and scientific exchange. The major meeting was the *Euro-Flavour06* conference, which was the inaugural meeting of the network. It is described in the following section. Sect. 3.2 summarises other conferences and workshops organised at one of the nodes, if they were totally or in part devoted to flavour physics. Sect. 3.3 is devoted to other conferences and workshops, at which results from FLAVIANet were presented. In Sect. 3.4 we summarise the individual networking activity related to research. Finally we justify changes to our original schedule.

3.1 Euro-Flavour06

The conference Euro-Flavour06 was the Inaugural Workshop of the European Flavour Physics Network FLAVIANet. It took place in Barcelona in Casa de Convalescencia from the 2nd to the 4th of November of 2006. The meeting was organized by M. Jamin and J. Matias, from node no. 2. The main topics of the meeting correspond to the subjects of the six working groups within FLAVIANet, namely:

- Kaon decays
- B-physics
- Tau-charm and quarkonia
- Analytic approaches to QCD
- Lattice methods
- Radiative return and Monte Carlo tools

There were a total of 77 participants (about one quarter of them were students) and 29 plenary talks. On Friday afternoon we organized six parallel sessions, one per each working group to discuss specific topics of each field. Most of these talks were presented by students and postdocs. Discussions in Kaon physics WG1 focused on the future of Kaon Physics at CERN and $K \rightarrow 3\pi$, B physics WG2 focused on the decays $B \rightarrow K^*\gamma$, $B \rightarrow \pi K$ and $B_s \rightarrow KK$, Tau-charm and quarkonium physics WG3 focused on the open problems in charm spectroscopy, determinations of V_{us} and m_s from hadronic τ decays, Analytic approaches to non-perturbative QCD (WG4) focused on D decays and resonance lagrangians, Lattice methods (WG5) focused on weak matrix elements using Neuberger quarks and the impact on B-physics, K-physics and chiral perturbation theory and finally, Radiative return and Monte Carlo tools (WG6) discussed on MC generators for low energy hadronic cross section.

Overview of the plenary talks:

Speaker	talk title
Chris Sachrajda	<i>Lattice Computations in Kaon Physics</i>
M. Antonelli	<i>A working group on precise SM tests in K decays</i>
G. Isidori	<i>Minimal Flavour Violation: from quarks to leptons</i>
S. Trine	<i>Effects of New Physics on the rare decays $K_L \rightarrow \pi \ell^+ \ell^-$</i>
M Davier	<i>Physics with $e+e^-$ and tau spectral functions</i>
G. Rodrigo	<i>PHOKHARA and the radiative return</i>
C. Smith	<i>Pion vector form-factor and the muon $g-2$</i>
F. Palombi	<i>Non-perturbative renormalization of four-fermion operators in the static approximation</i>
J. Heitger	<i>Towards a determination of the B_s-meson decay constant in two-flavour QCD</i>
S. Necco	<i>Chiral condensate from quenched lattice QCD</i>
T. Vladikas	<i>Lattice phenomenology from twisted mass QCD: a European approach to dynamical fermions</i>
A. Rusetsky	<i>The Delta resonance in a finite volume</i>
C. Farrel	<i>The top Yukawa Coupling at 500 GeV</i>
C. Reisser	<i>Top decay and electroweak effects at the $\bar{t}-t$ threshold</i>
T. Nakada	<i>Experimental review on future B-physics</i>
S. Descotes-Genon	<i>QCD factorisation and flavour symmetries illustrated in $B_{d,s} \rightarrow KK$ decays</i>
T. Hurth	<i>Light-cone sum rules in soft-collinear effective theory</i>
M. Blanke/A. Buras	<i>FCNC Processes in the Littlest Higgs Model with T-Parity</i>
U. Nierste	<i>$B_s - B_s$ bar mixing in the Standard Model and beyond</i>
J. Charles	<i>Bayesian magic in flavour physics</i>
E. Passemar	<i>Scalar K pi form factor and new tests of the Standard Model</i>
C. Haefeli	<i>Aspects of ChPT at large m_s</i>
M. Misiak	<i>Weak radiative B-meson decay in the SM and beyond: the NNLO case</i>
J. Rohrer	<i>Phenomenology of $B \rightarrow VV$ decays</i>

F. De Fazio	<i>Rare B decays and Universal Extra Dimensions</i>
J. Soto	$\Upsilon(nS) \rightarrow X\gamma$
R. Kaiser	<i>Towards a consistent estimate of the chiral low-energy constants</i>
K. Kampf	<i>Role of vector resonances in the flavour symmetry breaking sector</i>
J. Bijnens	<i>Photons and partial quenching; $\eta \rightarrow 3\pi$ at two loops: Status report and preliminary results</i>

In addition there were plenary talks reporting from the working group sessions.

3.2 Conferences and workshops within FLAVIANet

Several conferences and workshops took place in the FLAVIANet nodes. Here we list both genuine FLAVIANet meetings and international conferences and workshops organised by FLAVIANet members at their home institutions.

Node no.	Conference/Workshop
3	<i>LHCb upgrade workshop</i> , Univ. of Durham, UK, 11-12 January 2007
3	<i>ApeNEXT: Computational Challenges and First Physics Results</i> , Galileo Galilei Institute for Theoretical Physics, Arcetri, Italy, 8-10 February 2007.
5	FLAVIANet <i>Mini-Workshop on Kaon Decays</i> , Laboratori Nazionali di Frascati, Frascati, Italy, 18-19 May 2007.
5	<i>Kaon 2007</i> , May 21-25 2007, Frascati National Laboratories of INFN, Italy. http://www.lnf.infn.it/conference/kaon07/
1	<i>V. European Twisted Mass Collaboration Meeting</i> , 11-12 June 2007, Valencia
5,8	<i>Lattice computations and subatomic physics</i> , 14-15 June 2007, Orsay
3	<i>Heavy Flavour Physics (UK Forum)</i> , Univ. of Durham, UK, 21-22 June 2007
7	<i>4th International Pion-Nucleon PWA Workshop</i> 26-29 Jun 2007, Helsinki, Finland, http://www.hip.fi/~pwa07/
4	<i>15th International Conference On Supersymmetry And The Unification Of Fundamental Interactions (SUSY07)</i> , 26 Jul - 1 Aug 2007, Karlsruhe, Germany, http://www.susy07.uni-karlsruhe.de
5	<i>QCD in extreme conditions</i> , 6th - 8th August 2007, Frascati National Laboratories of INFN, Italy, http://www.lnf.infn.it/conference/xqcd2007/
3	<i>Renormalization Group and EFT</i> , Univ. of Durham, UK, 27-29 September 2007

3.3 Other conferences and workshops

Below we list the international conferences and workshops at which FLAVIA*net* researchers have presented their scientific results. Several of these conferences were attended by a large number of FLAVIA*net* members and were used for networking.

Name	Node no.	Conference/Workshop <i>talk title</i>
Roberto Bonciani	1	Rencontres de Physique des Particules 2007, LPSC Grenoble, France. February 2007. <i>Analytical calculation of massive Feynman diagrams and the NLO corrections to $H \rightarrow \gamma\gamma$ and $gg \rightarrow H$</i> HEP2007 Europhysics Conference, Manchester, England. July 2007. <i>Electroweak Corrections to Higgs Production and Decay</i>
Germán Rodrigo	1	8th International Symposium On Radiative Corrections (RADCOR 2007): Application Of Quantum Field Theory To Phenomenology, 1-6 Oct 2007, Florence, Italy, <i>Axigluon signatures at hadron colliders</i> 5th Super B Factory Workshop, 9-11 May 2007, Paris, France, <i>ISR studies at flavour factories</i> Symposium on Precision Calculations for Hadron and Lepton Colliders, 23-24 Nov 2007, Karlsruhe, Germany, <i>From top asymmetries to PHOKHARA</i> International Linear Collider (ILC) Workshop (ILC-ECFA and GDE Joint Meeting), 6-10 Nov 2006 Valencia, Spain, <i>A new method to compute multileg one-loop cross sections</i>
Ignasi Rosell	1	QCD@work2007: International Workshop on Quantum Chromodynamics, Theory and Experiment, 16-20 June 2007, Martina Franca, Italy, <i>Determining chiral couplings at NLO</i>
Silvia Necco	1	25th International Symposium on Lattice Field Theory, 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Determining QCD Low-Energy couplings from lattice simulations</i> Workshop on Domain Wall Fermions at Ten Years, 15-17 Mar 2007, Upton, New York, <i>Chiral condensate from finite-size study</i> Fermions and Extended Objects on the Lattice, <i>The chiral condensate in QCD: a finite-size scaling study on the lattice</i> XII IFT-UAM/CSIC Christmas Workshop, Madrid, Spain, <i>The chiral condensate in QCD: a finite-size scaling study on the lattice</i>

Pilar Hernández	1	<p>Workshop on Domain Wall Fermions at Ten Years, 15-17 Mar 2007, Upton, New York, <i>Low-energy Couplings from Lattice QCD in the ϵ-regime</i></p> <p>Golden 07: International Workshop on The Golden Channel at a Neutrino Factory, 27-30 June 2007, Valencia, Spain, <i>Organizer</i></p> <p>25th International Symposium on Lattice Field Theory, 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Weak Low-energy Couplings from topological zero-mode wavefunctions</i></p> <p>9th International Workshop on Neutrino Factories, Superbeams and Beta-beams (NuFact07) 6-11 Aug 2007, Okayama, Japan, <i>Convenor</i></p>
Jorge Portolés	1	<p>9th International Workshop on Tau Lepton Physics (Tau06), 19-22 Sep 2006, Pisa, Italy, <i>Hadronic decays of the tau lepton: Theoretical Outlook</i></p> <p>4th International Workshop on The CKM Unitarity Triangle (CKM 2006), 12-16 Dec 2006, Nagoya, Japan, <i>Analytical approaches to the calculation of $f_+^{K^0\pi^-}(0)$</i></p> <p>21st International Workshop on Weak Interactions And Neutrinos (WIN07) 15-20 Jan 2007, Kolkata, India, <i>V_{ud} and V_{us} : Theoretical progress $\pi\pi$ rescattering in $K \rightarrow \pi\pi\pi$</i></p> <p>31st International Conference of Theoretical Physics: Matter To The Deepest: Recent Development In Physics Of Fundamental Interactions 5-11 Sep 2007, Ustron, Katowice, Poland, <i>Chiral Low-Energy Constants : Status and Prospects</i></p>
Vicent Mateu	1	<p>5th International Workshop on Chiral Dynamics, Theory And Experiment (CD 2006) 18-22 Sep 2006, Durham / Chapel Hill, North Carolina, <i>Exceptional and non-exceptional contributions to the radiative pion decay</i></p> <p>QCD@work2007: International Workshop on Quantum Chromodynamics, Theory and Experiment, 16-20 June 2007, Martina Franca, Italy, <i>Chiral Perturbation Theory in the presence of external tensor sources and its phenomenological applications</i></p>
Pablo Roig	1	<p>QCD@work2007: International Workshop on Quantum Chromodynamics, Theory and Experiment, 16-20 June 2007, Martina Franca, Italy, <i>Hadronic decays of the tau lepton into $KK\pi$ modes within Resonance Chiral Theory</i></p>

Martín González	1	12th Frascati Spring School 'Bruno Touschek' in Nuclear, Subnuclear and Astroparticle Physics: Flavor And Hadron Physics In The Wake Of LHC 14-18 May 2007, Frascati, Italy, <i>Hadronic decays of the tau lepton into K K pion modes within Resonance Chiral Theory</i>
Antonio Pich	1	12th Frascati Spring School 'Bruno Touschek' in Nuclear, Subnuclear and Astroparticle Physics: Flavor And Hadron Physics In The Wake Of LHC 14-18 May 2007, Frascati, Italy, <i>Estimate of the light-flavour QCD condensates contributing to the V-A correlator</i> 9th International Workshop on Tau Lepton Physics (Tau06), 19-22 Sep 2006, Pisa, Italy, <i>Tau Physics 2006: Summary and Outlook</i> 4th Super B Factory Workshop, 13-15 November 2006, Monte Porzio Catone, Italy, <i>Tau physics: theory</i> 5th Super B Factory Workshop, 9-11 May 2007, Paris, France, <i>Flavour physics with other facilities</i> Kaon International Conference (KAON'07) 21-25 May 2007, Frascati, Italy, <i>Theoretical progress on the V_{us} determination from tau decays</i> 31st International Conference of Theoretical Physics: Matter To The Deepest: Recent Development in Physics of Fundamental Interactions, 5-11 Sep 2007, Ustron, Katowice, Poland, <i>Selected topics on tau physics</i>
José Antonio Oller	1	HadronTH'06 Workshop, 7-9 Sep 2006, Peñíscola, Spain, <i>A Non-Perturbative Chiral Study of Pseudoscalar Masses</i> 5th International Workshop on Chiral Dynamics, Theory and Experiment, 18-22 Sep 2006, UNC-Chapel Hill, North Carolina, USA, <i>Status of SU(3) Chiral Dynamics for Baryons ; Non-Perturbative Study of Pseudoscalar Self-Energies</i> IX International Conference on Hypernuclear and Strange Particle Physics, 10-14 Oct 2006, University of Mainz, Mainz, Germany, <i>On the Strangeness –1 Meson-Baryon Scattering</i> MENU2007, 11th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon, 10-14 Sep 2007, Forschungszentrum Juelich, Juelich, Germany, <i>Scalar radius of the pion and two photons into two pions. Strong S-wave final state interactions</i>

		XII International Conference on Hadron Spectroscopy, 8-13 Oct 2007, Laboratori Nazionali di Frascati, Rome, Italy, <i>On the Strangeness –1 Meson-Baryon Spectroscopy</i>
Elisabetta Pallante	1	XII International Conference on Hadron Spectroscopy, 8-13 Oct 2007, Laboratori Nazionali di Frascati, Rome, Italy, <i>Light Hadrons in Chiral Perturbation Theory</i>
M. Jamin	2	XLIIInd Rencontres de Moriond EW, 10-17 March 2007, La Thuile, Italy <i>Status of V_{us}</i>
J. Nieves	2	poster at The XXV International Symposium on Lattice Field Theory, Regensburg, Germany, August 2007 <i>Elastic s-wave scattering phase shifts and V_{ub} from lattice calculations of form factors for exclusive semileptonic decays</i>
A. Pineda	2	Workshop on Fundamental Neutron Physics, Seattle, USA, 2007 <i>Nuclear effects in atomic physics from effective theories</i>
A. Bramon	2	Int. Conf. KAON(2007), LNF, Frascati, Italy, May 21-25, 2007, <i>Local realism vs quantum mechanics with entangled neutral kaons</i>
		Quantum Theory: Reconsiderations of Foundations-4(QTRF4), Vaxjo, Sweden, June 11-16, 2007, <i>Kaonic quantitative complementarity and quantum erasers</i>
J. Matias	2	LHCb Meeting, CERN, Geneva, Switzerland, March 2007, $B^0 \rightarrow K^{*0}(\rightarrow K\pi)\ell^+\ell^-$
J. Soto	2	Hirscheegg 2007 The structure and dynamics of hadrons, Hirscheegg, Austria, January 2007 <i>Semi-inclusive radiative decays of Upsilon (1S)</i>
J. Prades	2	Int. Conf. KAON(200) Int. Conf. KAON(2007), LNF, Frascati, Italy, May 21-25, 2007 <i>ChPT Progress on non-leptonic and radiative Kaon decays</i>
		Topical workshop on the Muon magnetic moment, 25-26 October, Univ. of Glasgow, U.K. <i>Light-by-light contribution to Muon g – 2: Status and Prospects</i>
R. Escribano	2	ETA07: 2nd EtaMeson-Net Workshop, Peñíscola, Spain, May 10-11, 2007 <i>On the gluon content of the η and η' mesons</i>
Patricia Ball	3	Future of Heavy Flavour Physics, Oct 2006, London, U.K., <i>Probing New Physics Through Flavour</i>
Roman Zwicky	3	Flavour in the era of the LHC, October 2006, CERN, Switzerland, <i>Time dependent CP asymmetry in $B \rightarrow K^*\gamma$</i>
C.T. Sachrajda	3	First Euroflavour Workshop, 2-4 November 2006, Barcelona, Spain, <i>Lattice Computations in Kaon Physics</i>

Michael Pennington	3	Yukawa Institute Symposium, New Frontiers in QCD: Exotic hadrons and hadronic matter, 19-26 Nov 2006, Kyoto, Japan <i>Can experiment distinguish between a four quark scalar, a molecule or a $\bar{q}q$ meson?</i>
Patricia Ball	3	CKM2006, 4th International Workshop on the CKM Unitarity Triangle, 12-16 Dec 2006, Nagoya, Japan, $ V_{ub} $ from $B \rightarrow \pi e \nu$ CKM06, 4th International Workshop on the CKM Unitarity Triangle, 12-16 Dec 2006, Nagoya, Japan, $ V_{td}/V_{ts} $ from QCD sum rules on the light-cone CKM06, 4th International Workshop on the CKM Unitarity Triangle, 12-16 Dec 2006, Nagoya, Japan, <i>Constraints on new physics from γ and V_{ub}</i>
Jonathan Flynn	3	CKM06, 4th International Workshop on the CKM Unitarity Triangle, 12-16 Dec 2006, Nagoya, Japan, $ V_{ub} $ exclusive: form factors from lattice QCD
Christopher Sachrajda	3	CKM06, 12-16 Dec 2006, Nagoya, Japan, <i>Lattice Flavourdynamics: Status and Prospects</i>
Patricia Ball	3	BaBar workshop on physics at 1 ab^{-1} , Dec 2006, SLAC, U.S.A., $ V_{tb}/V_{ts} $ and γ from B to $(\rho, \omega)\gamma/B$ to $K^*\gamma$ Annual U.K. Theory Meeting, December 2006, Durham, U.K., <i>QCD effects in B physics</i> First LHCb Collaboration Upgrade Workshop, 11-12 January 2007, Edinburgh, U.K., <i>Exclusive b to s transitions at the LHC</i> First LHCb Collaboration Upgrade Workshop, 11-12 January 2007, Edinburgh, U.K., <i>Theory Summary</i>
C.T. Sachrajda	3	First LHCb Collaboration Upgrade Workshop, 11-12 January 2007, Edinburgh, UK, <i>Prospects for Lattice Phenomenology</i>
Michael Pennington	3	International Workshop XXXV on Gross Properties of Nuclei & Nuclear Excitations, 14-20 January 2007, Hirschegg, Austria, <i>The structure and dynamics of hadrons</i> Workshop on QCD and Confinement: connecting the light and heavy quark domains, 12-16 March 2007, ECT*, Trento, Italy, <i>Scalars: the Higgs sector of QCD</i> International Conference on Hadron Structure and Spectroscopy, 19-22 March 2007, Freiburg, Germany, <i>Hadron structure and dynamics at the QCD scale</i>
Patricia Ball	3	<i>Rencontres de Moriond</i> , March 2007, La Thuile, France, <i>Probing new physics through B_s mixing</i> <i>Rencontres de Moriond</i> , March 2007, La Thuile, France, $D^0-\bar{D}^0$ mixing – Theory

Frank Close	3	5th Flavor Physics and CP Violation Conference (FPCP 2007), 12-16 May 2007, Bled Slovenia <i>Rumsfeld Hadrons</i>
Patricia Ball	3	5th Flavor Physics and CP Violation Conference (FPCP 2007), 12-16 May 2007, Bled Slovenia <i>Exclusive Semileptonic Decays of B Mesons</i>
C.T. Sachrajda	3	Kaon '07, Kaon International Conference, 21-25 May 2007, Frascati, Italy, <i>Lattice Studies of Non-Leptonic Decays</i>
A. Jüttner	3	Kaon '07 Kaon International Conference, May 21-25 2007, Frascati, Italy <i>$K \rightarrow \pi$ semileptonic form factor with 2+1 flavor domain wall Fermions on the lattice</i>
Frank Close	3	Physics in Collision 26-29 June, Annecy <i>Rumsfeld Hadrons</i>
Roman Zwicky	3	EPS 2007 (European Physical Society Conference on High Energy Physics), 19-25 July, 2007, Manchester, UK <i>Unparticles and CP-violation</i>
J.M. Flynn	3	25th International Symposium on Lattice Field Theory, 30 July - 4 August 2007, Regensburg, Germany, <i>Elastic s-wave scattering phase shifts and V_{ub} from lattice calculations of form factors for exclusive semileptonic decays</i>
Andreas Jüttner	3	25th International Symposium on Lattice Field Theory, 30 July - 4 August 2007, Regensburg, Germany, <i>Status of Kaon physics on the lattice</i>
Changhoan Kim	3	25th International Symposium on Lattice Field Theory, 30 July - 4 August 2007, Regensburg, Germany, $\Delta I = 1/2$ <i>$K \rightarrow \pi\pi$ decays at next-to-leading order in chiral perturbation theory</i>
Christopher Sachrajda	3	25th International Symposium on Lattice Field Theory, 30 July - 4 August 2007, Regensburg, Germany, <i>Parton distribution amplitudes</i>
Michael Pennington	3	MENU 2007, 9-14 Sept 2007, Jülich, Germany, <i>Structure of light scalar mesons</i>
Wolfgang mannshofer	Alt- 4	The 15th International Conference on Supersymmetry and the Unification of Fundamental Interactions (SUSY '07), 26 Jul - 1 Aug 2007, Karlsruhe, Germany, <i>SO(10) SUSY GUTs with family symmetries: the test of FCNCs</i>
Guido Bell	4	SCET Workshop 2007, 29-31 Mar 2007, Berkeley, California <i>NNLO corrections in hadronic B decays</i>

Martin Beneke	4	8th International Symposium On Radiative Corrections (RADCOR 2007): Application Of Quantum Field Theory To Phenomenology, 1-6 Oct 2007, Florence, Italy, <i>NNNLO results on top quark production near threshold and quarkonium bound states</i> HQL06 Heavy Quarks and Leptons, München, October 16-20, 2006, <i>Theory of non-leptonic B decays</i>
Monika Blanke	4	Planck'07: From the Planck Scale to the Electroweak Scale, Warsaw, June 9–13 2007, <i>Lepton Flavour Violation in the Littlest Higgs Model with T-Parity</i>
Andrzej Buras	4	5th Workshop On Flavour In The Era Of The LHC 26-29 Mar 2007, Geneva, Switzerland, <i>FCNC processes in the LHC era</i> Tenth European Meeting From the Planck Scale to the Electroweak Scale (Planck '07), 9-13 Jun 2007, Warsaw, Poland, <i>FCNC news</i>
Achim Denig	4	Workshop on the Structure and Dynamics of Hadrons, 15-20 Jan 2007, Hirschegg, Austria, <i>Perspectives for Charm Physics at a Super-B-Factory</i>
	4	Matter to the Deepest: Recent Developments in Physics of Fundamental Interactions, 5-11 Sept 2007, Ustron, Poland, <i>KLOE Results on Hadronic Cross Section</i>
Björn Duling	4	SUSY 07 in Karlsruhe, July 25– August 1 2007, <i>Lepton Flavor Violation in the LHT</i>
Thorsten Feldmann	4	Flavianet Meeting in barcelona, 2.11.-4.11.06 <i>Soft Collinear Effective Theory: REcent Results</i>
Agnieszka Grzelinska	4	DPG - spring meeting, 5-9 March 2007, Heidelberg, Germany <i>Using radiative return method to measure Λ form factors at B-meson factories</i>
Diego Guadagnoli	4	Ringberg Phenomenology Workshop on Perspectives in Heavy Flavor Physics, 1-6 Oct 2006, Ringberg Castle, Rottach-Egern, Germany <i>FCNCs within SUSY</i> NA48 Workshop, 12 Dec 2006, CERN, Geneva, Switzerland <i>Form Factors for Semileptonic Hyperon Decays from Lattice QCD</i> Conference IFAE 2007, 11-13 Apr 2007, Naples, Italy <i>SUSY effects in Delta F = 2 Transitions</i> The 2007 Europhysics Conference on High Energy Physics (EPS-HEP 2007), 19-25 Jul 2007, Manchester, UK <i>D0 - D0bar Mixing: Theory Introduction</i>

		<p>The 15th International Conference on Supersymmetry and the Unification of Fundamental Interactions (SUSY '07), 26 Jul - 1 Aug 2007, Karlsruhe, Germany, <i>A natural route to near-flavour-conservation in SUSY: the Minimal Flavour Violating MSSM. Application to meson mixings</i></p>
Andre Hoang	4	<p>KET LHC-D Topquark Workshop (II), Bad Honnef, Germany <i>Top quark mass: fitting, threshold and reconstruction</i></p>
		<p>Loopfest 6: Radiative Corrections for the LHC and ILC, April 16-18, 2007, Fermilab, Chicago, USA <i>Factorisation approach to top mass reconstruction</i></p>
Tobias Huber	4	<p>EPS HEP 2007, Manchester, UK, July 19-25 2007, <i>Recent developments in radiative B decays</i></p> <p>International Linear Collider Workshop, May 30 - June 3, 2007 DESY, Hamburg, Germany <i>Factorization approach to top mass reconstruction in the continuum: What mass is measured</i></p> <p>International Linear Collider Workshop, May 30 - June 3, 2007 DESY, Hamburg, Germany <i>Recent advances at the top threshold: summation of logs and finite lifetime corrections</i></p> <p>KET LHC-D Workshop on QCD and electroweak physics at the LHC, 5-6 July, 2007 Munich, Germany <i>Factorisation approach to top mass reconstruction</i></p> <p>KET LHC-D Workshop on QCD and electroweak physics at the LHC, 5-6 July, 2007 Munich, Germany <i>Factorisation approach to top mass reconstruction</i></p> <p>ILC Physics at Florence, Sept 12-16, 2007, Florence, Italy <i>Top physics at the ILC: a selective review</i></p> <p>8th International Symposium On Radiative Corrections (RADCOR 2007): Application Of Quantum Field Theory To Phenomenology, 1-6 Oct 2007, Florence, Italy, <i>QCD factorisation for top mass reconstruction</i></p>
Alexander Khodjamirian	4	<p>EPS Conference Manchester 19.-25. July 07 <i>V_{ub} determination using $B \rightarrow \pi$ form factor from Light-Cone Sum Rules</i></p>
Johann Kühn	4	<p>The IVIth Rencontres de Moriond session QCD AND HIGH ENERGY HADRONIC INTERACTIONS, March 17th - 24th, 2007, La Thuile, Italy, <i>Precise Quark Masses</i></p>
Debora Leone	4	<p>Miniworkshop on Electric Dipole Moments, 9-10 Oct 2006, CERN, Switzerland, <i>KLOE measurement of hadronic cross section via Radiative Return</i></p>

Thomas Mannel	4	Super B Factory Workshop in Frascati, 13.11.-15.11. <i>Semileptonic Decays at a Super B Factory</i>
Peter Marquard	4	Challenges in Particle Phenomenology, Vienna 1.12.-3.12. <i>Theoretical Tool for Heavy Quark Physics</i>
Ulrich Nierste	4	8th International Symposium On Radiative Corrections (RADCOR 2007): Application Of Quantum Field Theory To Phenomenology, 1-6 Oct 2007, Florence, Italy, <i>Three-loop matching coefficient of the vector current</i>
Stefan Recksiegel	4	CTP Symposium On Supersymmetry At LHC: Theoretical And Experimental Prospectives, 11-14 Mar 2007, Cairo, Egypt, <i>Bounds on new physics from B_s mixing</i>
Matthias Steinhauser	4	4th International Conference On Flavor Physics, 24-28 Sep 2007, Beijing, China, <i>B_s mixing and supersymmetry with large $\tan \beta$</i>
	4	HQL06 Heavy Quarks and Leptons, München, October 16-20 2006 <i>organizer</i>
	4	Linear Collider Workshop, 6-10 November, Valencia, Spain, <i>Complete Higgs mass dependence of $t\bar{t}$ threshold production to order $\alpha\alpha_s$</i>
	4	Conference on Linear Colliders (LCWS 07), 30 May – 3 June 2007, Hamburg, Germany <i>Precise Charm and Bottom Quark Masses</i>
	4	Conference on Linear Colliders (LCWS 07), 30 May – 3 June 2007, Hamburg, Germany <i>Loops for ILC</i>
	4	Workshop on Frontiers in perturbative quantum field theory, 14-16 June 2007, Bielefeld, Germany, <i>Challenges to Perturbation Theory from LHC and ILC</i>
	4	8th International Symposium On Radiative Corrections (RADCOR 2007): Application Of Quantum Field Theory To Phenomenology, 1-6 Oct 2007, Florence, Italy, <i>Precise charm and bottom quark masses</i>
David Straub	4	Tenth European Meeting From the Planck Scale to the Electroweak Scale (Planck '07), 9-13 Jun 2007, Warsaw, Poland, <i>Challenging $SO(10)$ SUSY GUTs with family symmetries through FCNC processes</i>
Cecilia Tarantino	4	Heavy Quarks and Leptons 2006, Munich, Germany, 16-20 Oct 2006, <i>B and K Physics in the Littlest Higgs Model with T-Parity</i>
	4	Super B IV, Villa Mondragone, Monte Porzio Catone, Italy, 13-15 Nov 2006, <i>B and K Physics in the Littlest Higgs Model with T-Parity</i>
	4	CKM 2006: Workshop on the Unitarity Triangle, Nagoya, Japan, 12-16 Dec 2006, <i>Flavour Physics in the Littlest Higgs Model with T-Parity</i>

		<p>Kaon International Conference (KAON'07) 21-25 May 2007, Frascati, Italy, <i>Beyond-SM expectations from very rare Kaon decays</i></p> <p>Lattice 2007 The XXV International Symposium on Lattice Field Theory, Regensburg, Germany, 30 Jul - 4 Aug 2007, <i>Light quark masses and decay constants from Twisted Mass QCD with $N_f = 2$</i></p>
Stéphanie Trine	4	<p>15th International Conference On Supersymmetry And The Unification Of Fundamental Interactions (SUSY07) 26 Jul-1 Aug 2007, Karlsruhe, Germany, <i>The Higgs sector of the MSSM and $B - \bar{B}$ mixing for large $\tan \beta$</i></p>
Selma Uhlig	4	<p>EPS HEP 2007 in Manchester, UK, July 19-25 2007, <i>Minimal Lepton Flavour Violation and Leptogenesis with exclusively low-energy CP violation</i></p>
Leonardo Vernazza	4	<p>DESY Theory Workshop, Hamburg, Germany, September 25-28 2007, <i>Hadronic B decays in the MSSM with large $\tan \beta$</i></p>
Nora Brambilla	5	<p>XX European Conference Few Body Problems in Physics, Pisa, Italy (Sep. 10-14, 2007) <i>Effective Field Theories for Heavy Quarkonium.</i></p> <p>Matter to the deepest, Ustron, Poland (Sep.5-11, 2007) <i>Heavy Quarkonium Physics: Theoretical Status.</i></p> <p>Charm07, Cornell, USA (Aug.5-8 2007) <i>Extractions of α_s and M_q from onia.</i></p> <p>Hard QCD with antiprotons at GSI FAIR, Trento, Italy (July 16-20, 2007) <i>Charmonium Spectroscopy and QCD.</i></p> <p>Confinement: light and heavy quark domains, Trento, Italy (March 12-16, 2007) <i>EFTs for Heavy Quarkonium and Quark Dynamics.</i></p> <p>The Structure and Dynamics of Hadrons, Hirschegg, Austria (Jan 14-20, 2007) <i>The Structure and Dynamics of Systems with two Heavy Quarks.</i></p>
Antonio Vairo	5	<p>Heavy Quarks and Leptons, 8th Int. Conf., Munich, Germany (Oct. 16-20, 2006) <i>NRQCD and Quarkonia.</i></p> <p>QCD @ work 07, Martina Franca, Italy (June 16-20, 2007) <i>The QCD Potential.</i></p> <p>Confinement: light and heavy quark domains, Trento, Italy (March 12-16, 2007) <i>The QCD Potential.</i></p> <p>The Structure and Dynamics of Hadrons, Hirschegg, Austria (Jan 14-20, 2007) <i>Heavy quarkonium physics.</i></p>
Giancarlo D'Ambrosio	5	<p>Kaon 2007, Frascati, Italy (May 21-25, 2007) <i>CPT and the Bell-Steinberger Relation.</i></p>

Luca Silvestrini	5	4th International Workshop on the CKM Unitarity Triangle, Nagoya, Japan (December 12-16, 2006) <i>Flavour Physics in SUSY beyond MFV</i> . Kaon 2007, Frascati, Italy (May 21-25, 2007) <i>Flavour physics and the role of Kaons</i> . 4th Workshop on Super B-Factor, Villa Mondragone, Italy (November 13-15, 2006) <i>SUSY effects in Flavour Physics</i> 5th Workshop on Super B-Factor, Paris, France (May 9-11, 2007) Model independent constraints on $\Delta F = 2$ operators.
Petros Dimopoulos	5	Lattice 2007, Regensburg, Germany (July 30- August 4 2007) <i>Renormalisation Constants of Bilinear Quark Operators with $N_f = 2$ Maximally Twisted Mass Fermions</i> .
Giancarlo Rossi	5	Lattice 2007, Regensburg, Germany (July 30- August 4 2007) <i>$O(a^2)$ cutoff effects in Wilson fermion simulations</i> .
Roberto Frezzotti	5	Lattice 2007, Regensburg, Germany (July 30- August 4 2007) <i>Scaling of hadronic observables in QCD with $N_f=2$ maximally twisted Wilson quarks</i> .
Gregorio Herdoiza	5	Lattice 2007, Regensburg, Germany (July 30- August 4 2007) <i>Quark mass dependence of the pion mass and decay constant using $N_f = 2$ maximally twisted fermions</i> .
Silvano Simula	5	Lattice 2007, Regensburg, Germany (July 30- August 4 2007) <i>Pseudo-scalar meson form factors with maximally twisted Wilson fermions at $N_f = 2$</i> .
Stefano Nicotri	5	Exploring QCD: Deconfinement, Extreme Environments and Holography, Cambridge, UK (August 2007) <i>Light glueballs in a holographic description of QCD</i> .
Fulvia de Fazio	5	International Workshop on Heavy Quarkonium 2007 17-20 October 2007, DESY Hamburg <i>Investigating the structure of $X(3872)$</i> .
Riccardo Faccini	5	XXIII International Symposium on Lepton and Photon Interactions at High Energy, Daegu, Korea (Aug 13-18, 2007) <i>Heavy Quarkonium Spectroscopy</i> .
Mario Antonelli	5	XXIII International Symposium on Lepton and Photon Interactions at High Energy, Daegu, Korea (Aug 13-18, 2007) <i>Precision SM tests with Kaons</i> .
Federico Mescia	5	Europhysics Conference on High Energy Physics, Manchester, UK (19-25 July 2007) <i>V_{us} determination from K_{l3} and K_{l2} decays</i> .

Gino Isidori	5	<p>XXIII International Symposium on Lepton and Photon Interactions at High Energy, Daegu, Korea (Aug 13-18, 2007) <i>Flavour Physics in the LHC era</i></p> <p>15th International Conference On Supersymmetry And The Unification Of Fundamental Interactions, Karlsruhe, Germany (26 Jul - 1 Aug 2007) <i>Large $\tan \beta$ effects in Flavour Physics.</i></p> <p>Kaon 2007, Frascati, Italy (May 21-25, 2007) <i>Conference Summary.</i></p> <p>5th meeting of the Workshop on Flavour in the era of the LHC CERN, Switzerland (March 26-28, 2007) <i>Benchmark scenarios</i></p> <p>CTP Symposium On Supersymmetry At LHC: Theoretical And Experimental Perspectives, , Cairo, Egypt (11-14 Mar 2007) <i>Supersymmetric effects in Flavour Physics.</i></p> <p>4th Workshop on Super B-Factory, Villa Mondragone, Italy (November 13-15, 2006) <i>Minimal Lepton Flavour Violation.</i></p> <p>4th International Workshop on the CKM Unitarity Triangle, Nagoya, Japan (December 12-16, 2006) <i>Summary of WG6: CKM fits and New Physics.</i></p>
Henryk Czyż	6	<p>Symposium "Precision calculations for Hadron and Lepton Colliders"(Hans Fest), 23-24 November 2006, Karlsruhe, Germany, <i>Radiative Return: 9 years of fruitful adventure</i></p> <p>XXXI International Conference of Theoretical Physics, Matter To The Deepest: Recent Developments In Physics of Fundamental Interactions, Ustroń, 5-11 September 2007, Poland, <i>New developments in the PHOKHARA MC generator</i></p> <p>XXXI International Conference of Theoretical Physics, Matter To The Deepest: Recent Developments In Physics of Fundamental Interactions, Ustroń, 5-11 September 2007, Poland, <i>organiser</i></p>
Janusz Gluza	6	<p>XXXI International Conference of Theoretical Physics, Matter To The Deepest: Recent Developments In Physics of Fundamental Interactions, Ustroń, 5-11 September 2007, Poland, <i>organiser</i></p>
Maria Krawczyk	6	<p>International Linear Collider (ILC) Workshop (ILC-ECFA and GDE Joint Meeting) Valencia, 6-10 November 2006, <i>convener</i></p> <p>Symposium "Precision calculations for Hadron and Lepton Colliders"(Hans Fest), 23-24 November 2006, Karlsruhe, Germany, <i>Precision calculation for 2HDM</i></p>

		<p>La Thuile "Moriond QCD", 16-24 March 2007, <i>convener</i></p> <p>Linear Collider Workshop 2007: LCWS2007 and ILC2007, DESY, Hamburg, Germany, May 30 - June 3, 2007, <i>convener</i></p> <p>Linear Collider Workshop 2007: LCWS2007 and ILC2007, DESY, Hamburg, Germany, May 30 - June 3, 2007, <i>Heavy Neutral MSSM higgses at the Photon Collider - a comparison of two analyses</i></p> <p>Linear Collider Workshop 2007: LCWS2007 and ILC2007, DESY, Hamburg, Germany, May 30 - June 3, 2007, <i>The charged Higgs boson mass in the 2HDM: decoupling and CP violation</i></p> <p>Tenth European Meeting From the Planck Scale to the Electroweak Scale Warsaw, Poland, June 9 - 13, 2007, <i>organiser</i></p> <p>Photon2007, Paris, 9-11 July 2007, <i>Introduction to Photon2007</i></p> <p>Cinvestav (Mexico City) Advanced Summer School in Physics Frontiers in Contemporary Physics 11- 13 July 2007, <i>4 Lectures on "Physics Reach at Future Colliders"</i></p> <p>XXXI International Conference of Theoretical Physics "Matter To The Deepest: Recent Developments In Physics of Fundamental Interactions, Ustron, Poland, 5-11 September 2007, <i>Physics at the ILC</i></p> <p>Florence [GGI] "ILC physics" 12-14 September 2007 <i>Physics at PLC</i></p>
Mikołaj Misiak	6	<p>FLAVOUR IN THE ERA OF THE LHC a Workshop on the interplay of flavour and collider physics, 4th meeting (WGs): CERN, Oct 9-11 2006, <i>$B \rightarrow X_s \gamma$ at NNLO</i></p>
Sławomir Wycech	6	<p>XXX Mazurian Lakes Conference on Physics, Nuclear Physics and Fundamental processes, 02-09 September 2007, Piaski, Poland, <i>Nuclear states of strange mesons</i></p>
Johan Bijnens	7	<p>FLAVIANet Kaon WG meeting, 18-19 May 2007, Frascati, Italy, <i>organizer, $K_{\ell 3}$ decays at p^6 in Chiral Perturbation Theory</i></p> <p>Kaon International Conference (KAON'07) 21-25 May 2007, Frascati, Italy, <i>Radiative and Semileptonic Kaon Decays in Chiral Perturbation Theory</i></p>
Pekko Metsä	7	<p>4th International Pion-Nucleon PWA Workshop 26-29 Jun 2007, Helsinki, Finland, <i>Forward analysis of pion-nucleon scattering, organizer</i></p>

Mikko Sainio	7	4th International Pion-Nucleon PWA Workshop 26-29 Jun 2007, Helsinki, Finland, <i>The GMO sum rule, organizer</i>
Johan Bijmens	7	25th International Symposium On Lattice Field Theory, 30 Jul-4 Aug 2007, Regensburg, Germany, <i>Quark Mass Dependence at Two Loops for meson Properties</i>
Jonna Koponen	7	25th International Symposium On Lattice Field Theory, 30 Jul-4 Aug 2007, Regensburg, Germany, <i>P- and D-wave spin-orbit splittings in heavy-light mesons</i>
Johan Bijmens	7	11th International Conference On Meson-Nucleon Physics And The Structure Of The Nucleon (MENU 2007), 10-14 Sep 2007, Julich, Germany, <i>η and η' physics</i>
Pekko Metsä	7	11th International Conference On Meson-Nucleon Physics And The Structure Of The Nucleon (MENU 2007), 10-14 Sep 2007, Julich, Germany, <i>Pion-Nucleon Partial Wave Analysis with Fixed-t Analyticity Constraints</i>
Mikko Sainio	7	11th International Conference On Meson-Nucleon Physics And The Structure Of The Nucleon (MENU 2007), 10-14 Sep 2007, Julich, Germany, <i>The GMO Sum Rule Revisited</i>
Tri-Nang Pham	8	1st Workshop On Theory, Phenomenology And Experiments In Heavy Flavor, 29-31 May 2006, Anacapri, Italy, <i>$B \rightarrow \pi\pi$ decays</i> QCDWork 2007, 16-20 June 2007, Marina Franca, Italy, <i>Two-photon decay of heavy quarkonium from heavy quark spin symmetry</i>
Sébastien Descotes-Genon	8	European Physical Conference on High-Energy Physics, 19-25 Jul 2007, Manchester, UK, <i>Combining QCD factorisation and flavour symmetries in B_d and B_s decays and $\pi\pi$ and πK revisited in three-flavour ReChPT</i> Lattice 07, XXV International Symposium on lattice field theory, 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>How far can you go ? Surprises and pitfalls in three-flavour extrapolations</i> 4th international workshop on the CKM unitarity triangle, 12-16 Dec 2007, Nagoya, Japan, <i>Combining QCD factorisation and flavour symmetries in $B_{d,s} \rightarrow K \bar{K}$ and Heavy decays, resonances and K-matrix</i>
Damir Becirevic	8	Flavour Physics and CP-violation 07, 12-16 May 2007, Bled, Slovenia, <i>Progress in Lattice QCD</i>

Emilie Passemar	8	Lattice 07, XXV International Symposium on lattice field theory, 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Use and misuse of ChPT for lattice QCD</i> International Conference on Hadron Physics Troia 2007, 30 Aug - 3 Sep 2007, Canakkale, Turkey, <i>An overview of recent results from lattice QCD</i> Kaon International Conference (KAON'07) 21-25 May 2007, Frascati, Italy, <i>Dispersive representation and shape of $K_{\ell 3}$ form factors</i>	ESR
Jan Stern	8	Kaon International Conference (KAON'07) 21-25 May 2007, Frascati, Italy, <i>Did one observe couplings of right-handed quarks to W ?</i>	
Benjamin Haas	8	Lattice 07, XXV International Symposium on lattice field theory, 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Improving the extraction of semileptonic form factors from LQCD</i>	ESR
Laurent Lellouch	8	Domain Wall Fermions at Ten Years, 15-17 Mar 2007, Brookhaven National Laboratory, N.Y. USA., <i>Chiral behavior in mixed action calculations with 2 + 1 sea quark flavors</i> Lattice 07, XXV International Symposium on Lattice Field Theory, 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Chiral behavior of pseudo-Goldstone boson masses and decay constants in 2 + 1 flavor QCD</i>	
Marian Kolesar	8	Hadron structure 2007, 3-7 Sep 2007, Modra-Harm'onia, Slovakia, <i>The η decay constant in resummed ChPT</i>	ESR
Jaroslav Trnka	8	Hadron structure 2007, 3-7 Sep 2007, Modra-Harm'onia, Slovakia, <i>Loops in resonance chiral theory</i>	ESR
Augusto Ceccucci	9	XIXth Petrov school 2007, 22 Jun - 3 Jul 2007, <i>First order formalism for spin-1 fields</i> 5th Workshop On Flavour in The Era Of The LHC, 26-29 March 2007, Geneva, Switzerland <i>Organizer</i> KAON'07 May 21-25 2007, Frascati, Italy, <i>Round Table on Future Initiatives</i>	ESR
Gilberto Colangelo	9	Mini-Workshop on the extraction of the $\pi\pi$ scattering lengths from K_{e4} decays, 6-7 March 2007, University of Bern, Switzerland <i>Organizer</i> http://www.itp.unibe.ch/Ke4/ 3. Vienna Central European Seminar on particle physics and quantum field theory, 1-3 December 2006, Vienna Austria <i>Hadronic vacuum polarization contributions to $(g - 2)_\mu$</i>	

Stephan Dürr	9	<p>KAON'07, May 21-25, 2007, Frascati, Italy <i>Theoretical progress on $\pi\pi$ scattering lengths and phases</i></p> <p>Hadron physics on the Lattice, 10-11 September 2007, Milos, Greece <i>Status of chiral extrapolations</i></p> <p>XXV International Symposium on Lattice Field Theory, 30 July - 4 Aug 2007 Regensburg, Germany <i>The art of smearing – can one reach $M_\pi = 140$ MeV in quenched QCD with clover quarks ?</i></p>
Jürg Gasser	9	<p>QCD and Few-Hadron systems Nov. 13-17, 2006, Bad Honnef, Germany, <i>Cusps in $K \rightarrow 3\pi$ decays</i></p> <p>V Kaon Miniworkshop, December 12, 2006, CERN, Switzerland <i>$\pi\pi$ rescattering in $K \rightarrow 3\pi$ decays: status of theory</i></p>
Leonardo Giusti	9	<p>KAON'07, May 21-25, 2007, Frascati, Italy <i>Theoretical Progress on Cusp effect in K_{e4} decays</i></p> <p>MENU 2007, Sept. 10–14, 2007, Jülich Germany <i>Effective Quantum Field Theories</i></p> <p>XXV International Symposium on Lattice Field Theory, 30 July - 4 Aug 2007 Regensburg, Germany <i>Theta dependence of the vacuum energy in the SU(3) gauge theory from the lattice</i></p>
Ulrich Haisch	9	<p>Ringberg Phenomenology Workshop on Perspectives in Heavy Flavour Physics, 1–6 October 2006 Ringberg Castle, Rottach-Egern, Germany <i>Rare decays</i></p> <p>4th Workshop on the CKM Unitarity Triangle (CKM2006) 12–16 December 2006, Nagoya, Japan <i>convener</i></p> <p>XLII Rencontres de Moriond QCD and High Energy Hadronic Interactions, 17–24 March 2007, La Thuile, Italy <i>Recent developments in $B \rightarrow X_s \gamma$</i></p> <p>15th International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS2007) 16–20 April 2007, Munich, Germany <i>How to kill a penguin</i></p>
Tobias Hurth	9	<p>KAON'07, May 21-25, 2007, Frascati, Italy <i>Rare K-(vs.) B-decays</i></p> <p>SuperB IV, 13-15 November 2006, Monte Porzio Catone, Italy <i>General Questions on the Physics Case of a SuperB Factory</i></p> <p>4th Workshop On Flavour in The Era Of The LHC, 9-11 October 2006, Geneva, Switzerland <i>Organizer</i></p> <p>5th Workshop On Flavour in The Era Of The LHC, 26-29 March 2007, Geneva, Switzerland <i>Organizer</i></p> <p>Pheno 2007 Symposium: Prelude to the LHC, 6-9 May 2007, Madison, USA <i>New Physics in the B Sector</i></p>

Heinrich Leutwyler	9	<p>SuperB V, 9-11 May 2007, Paris, France <i>Flavour in the Era of the LHC</i></p> <p>Les Houches 2007: Physics at TeV Colliders, 16. June 2007 Les Houches, France <i>Interplay of High-p_T and Flavour Physics</i></p> <p>CB@MAMI collaboration meeting 4.10.2006, Basel, Switzerland <i>Mass and width of the sigma meson</i></p> <p>Rencontres de Moriond, "QCD and Hadronic Interactions" 17-24 March 2007, La Thuile, Italy, <i>Recent developments in light flavour hadron physics</i></p> <p>International School of Subnuclear Physics, 28.8-7.9.2007 Erice, Italy, <i>Physics of the light quarks</i></p> <p>4th International Conference on Flavour Physics 24.-28.9.2007, Beijing, China <i>Recent developments in light flavour hadron physics</i></p> <p>Mini-Workshop on Chiral Dynamics and Light Flavour Physics 29-30 September 2007, Beijing, China <i>$\pi\pi$ scattering</i></p>
Tatsuya Nakada	9	<p>4th Workshop on the CKM Unitarity Triangle (CKM2006) 12–16 December 2006, Nagoya, Japan <i>Future Flavour Physics at CERN</i></p> <p>2nd International Workshop on B Factory and New Measurements December, 2006, Nara, Japan. <i>CERN LHC Experiments and B Physics Programme</i></p> <p>5th Workshop On Flavour in The Era Of The LHC, 26-29 March 2007, Geneva, Switzerland <i>LHC Heavy Flavour Programme</i></p> <p>Super Symmetry in 2010, June, 2007 Sapporo, Japan <i>LHCb Status and Physics</i></p> <p>13th International Symposium on Particle, String and Cosmology July, 2007 London, Great Britain <i>CP Violation and Quark Flavour Experiment</i></p> <p>2nd Time and Matter Conference Bled, Slovenia, August, 2007 <i>CP Violation and Flavour Physics Experiments in the LHC Era</i></p> <p>National Meeting for Particle Physics and Cosmology, September, 2007guas de Lindia, Brazil, <i>CP Violation and Quark Flavour Experiment</i></p>
Christopher Smith	9	<p>4th Workshop on the CKM Unitarity Triangle (CKM2006) 12–16 December 2006, Nagoya, Japan <i>Review of rare K decays in the Standard Model</i></p> <p>KAON'07, May 21-25, 2007, Frascati, Italy <i>Recent progress on supersymmetric effects in rare K decays</i></p>

		15th International Conference on Supersymmetry (SUSY 2007), 25 Jul - 1 Aug 2007, Karlsruhe, Germany <i>Recent progress on supersymmetric effects in rare K decays</i>
S. Fajfer, B. Golob, P. Križan	10	5th Flavour Physics and CP Conference (FPCP 2007), 12-16 May 2007, Bled, Slovenia, http://www-f9.ijs/fpcp07 <i>organizers</i>
Gerhard Ecker	10	Matter to the Deepest – Recent Developments in Physics of Fundamental Interactions, 5-11 September 2007, Ustron, Poland, <i>Progress in Chiral Perturbation Theory</i>
Bostjan Golob	10	Joint Meeting of Pacific Region Particle Physics Communities (JPS/DPF 2006), 29 October - 3 November 2006, Honolulu, HI, <i>Searches for D^0-\bar{D}^0 mixing at Belle</i>
Peter Križan	10	Lepton-Photon 2007, 13-18 August 2007, Daegu, Korea, <i>Recent result on D^0 mixing from Belle</i>
Jernej Kamenik	10	XXVII Physics in Collision, June 26-29 June 2007, Annecy, France, <i>D mixing and CPV (Belle)</i>
Svjetlana Fajfer	10	HEP2007, 19-25 July 2007, Manchester, England, <i>Chiral behavior of the heavy meson mixing amplitudes in the standard model and beyond</i>
Jure Zupan	10	The 4th International Conference on Flavor Physics, 24-28 September 2007, Beijing, China, <i>Impact of positive parity mesons on charm meson decays</i>
		International Conference on Hadron Physics TROIA '07, 30 August - 3 September 2007, Canakkale, Turkey, <i>Messages from inclusion of positive parity heavy mesons in heavy meson chiral perturbation theory</i>
		SCET07 workshop, 29-31 March 2007, LBNL, Berkeley, USA, <i>Seminclusive hadronic B decays in SCET</i>
		LHCb-UK Meeting 2007, 24-26 September 2007, IPPP, Collingwood College, Durham University, Durham, UK, <i>Review of γ extractions</i>
		5th Flavor Physics and CP Violation Conference (FPCP 2007), 12-16 May 2007, Bled, Slovenia, <i>Predictions for $\sin 2(\beta/\phi_1)_{eff}$ in $b \rightarrow s$ penguin dominated modes</i>
		4th International Workshop on the CKM Unitarity Triangle (CKM 2006), 12-16 Dec 2006, Nagoya, Japan, <i>Penguin pollution estimates relevant for ϕ_2/α extraction and γ from $B \rightarrow DK$</i>

Rainer Sommer	11	XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Preparing for $N_f = 2$ simulations at small lattice spacings</i> Workshop on Hadron physics on the Lattice, 10 - 11 Sep 2007, Milos, Greece, <i>Determination of quark masses</i>
Damiano Guazzini	11	XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>The B-meson mass splitting from non-perturbative quenched lattice QCD</i> 8th Meeting of SFB/TR 9 Computational Particle Physics, 22 Feb - 23 Feb 2007, Aachen, Germany, <i>b-quark mass and Bs decay constant from a combination of static quarks and QCD on the lattice</i>
Benoît Blossier	11	XII LNF Spring School, 14 - 18 May 2007, Frascati, Italy, <i>Towards a numerical solution to the "1/2 vs. 3/2" puzzle</i> XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Twisted mass QCD in the charm sector</i>
Nicolas Garron	11	XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>FB at the 1/m order of HQET</i>
Oliver Witzel	11	XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Spectral properties of the non-hermitean Wilson operator in the Schroedinger functional</i>
Shinji Takeda	11	XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Automatic generation of vertices for the Schroedinger functional</i>
Oliver Bär	11	XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>The vector and axial vector current in Wilson ChPT</i> Lattice QCD, Chiral Perturbation Theory and Hadron Phenomenology October 2 - 6, 2006 Trento, Italy <i>Lattice QCD with mixed actions: Overlap fermions on a twisted mass sea</i>
Karl Jansen	11	XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Stout seamaering for twisted mass fermions</i>

Akaki Rusetsky	11	<p>Workshop on QCD and few-hadron systems, 13-17 November 2006, Bad Honnef, Germany <i>ChPT in a finite volume: the Δ-resonance</i></p> <p>Seminar at the University of Basel, Switzerland, 24 May 2007 <i>$K \rightarrow 3\pi$ decays in effective field theories</i></p> <p>Workshop on Lattice QCD, ChPT and Hadron Phenomenology, 2-6 October 2006, Trento, Italy <i>The Δ-resonance in a finite volume</i></p> <p>IX International conference in Hypernuclear and Strange Particle Physics, 10-14 October 2006, Mainz, Germany <i>Kaon-nucleon scattering lengths from kaonic deuterium experiments</i></p> <p>EuroFlavour06, 2-4 November 2006, Barcelona, Spain <i>$K \rightarrow 3\pi$ decays in effective field theories</i></p> <p>EuroFlavour06, 2-4 November 2006, Barcelona, Spain <i>The Δ-resonance in a finite volume</i></p> <p>Workshop on the physics of excited nucleons (NSTAR 2007), 5-8 September 2007, Bonn, Germany <i>The Δ-resonance in a finite volume</i></p> <p>11th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon, 10-14 September 2007, Jülich, Germany <i>Effective field theory framework for $\bar{K}d$ scattering</i></p>
Ulf-G. Meißner	11	<p>ECT* – I3HP Workshop on Lattice QCD, Chiral Perturbation Theory, and Hadron Phenomenology, October 2006, Trento, Italy <i>Thoughts on chiral extrapolations for excited states</i></p> <p>Invited talk at the Workshop of the SFB 634, December, 2006, Paradeismühle, Germany <i>Modern theory of nuclear forces: Status and perspectives</i></p> <p>Workshop on Three-Nucleon Interactions from Few- to Many-Body Systems, March 2007, TRIUMF, Vancouver, Canada <i>On the low-energy constants of the chiral effective pion-nucleon Lagrangian</i></p> <p>Invited talk at I3HP Collaboration Committee Meeting, May 2007, Frascati, Italy <i>HadronTH: Structure and dynamics of hadrons</i></p> <p>Invited talk at Jefferson Lab User Group Meeting 2007, June 2007, Newport News, USA <i>Nucleon form factors from dispersion theory</i></p> <p>International Conference on Hadron Physics TROIA'07, August 2007, Canakkale, Turkey <i>Hadronic atoms</i></p>

Bastian Kubis	11	<p>Invited talk at I3 HadronPhysics2 Opening Meeting, September 2007, Frascati, Italy <i>QCDnet: Hadron physics with light and heavy quarks</i></p> <p>HadronTH'07 Workshop, September 2007, Barcelona, Spain <i>Quark mass dependence of baryons</i></p> <p>Workshop on Physics and Astrophysics of Hadrons and Hadronic Matter, 6-10 November 2006, Shantiniketan, India <i>An introduction to chiral perturbation theory</i></p> <p>5th Kaon Mini Workshop, 12 December 2006, CERN, Geneva, Switzerland <i>Aspects of radiative $K_{\ell 3}^+$ decays</i></p> <p>Lectures at the Universidad Complutense, 20-21 March 2007, Madrid, Spain <i>An introduction to chiral perturbation theory</i></p> <p>11th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon, 10-14 September 2007, Jülich, Germany <i>Isospin violating nucleon form factors</i></p>
Jochen Heitger	11	<p>Workshop of the European Flavour Physics Network FLAVIANet (EuroFlavour06), 2 - 4 Nov 2006, Barcelona, Spain, <i>Towards a determination of the B_s-meson decay constant in two-flavour QCD</i></p> <p>XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>A strategy for performing non-perturbative computations in HQET with dynamical light quarks</i></p>
Patrick Fritzscht	11	<p>XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Non-perturbative relation between the bare and the RGI heavy quark mass in finite-volume two-flavour QCD</i></p>
Gernot Münster	11	<p>Workshop "QCD on Teraflops Computers", 11 Oct - 13 Oct 2006, Bielefeld, Germany, <i>Twisted mass QCD</i></p>
Federico Farchioni	11	<p>DPG Frühjahrstagung Heidelberg 2007, 5 Mar - 9 Mar 2007, Heidelberg, Germany, <i>Precise results from lattice QCD with light quarks in the twisted-mass formulation</i></p> <p>XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>QCD with one quark flavor: I. Numerical simulations and hadron spectrum</i></p> <p>DESY Theory Workshop, 25 Sep - 28 Sep 2007, Hamburg, Germany, <i>Lattice Calculations at small Quark Masses and Overlap Fermions</i></p>

Filippo Palombi	11	XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Preliminary non-perturbative results of the B_s mixing parameter in the static limit from quenched $tmQCD$</i>
Stefano Capitani	11	Workshop Domain Wall Fermions at 10 Years, 15-17 March, BNL, USA, <i>Chiral Violations in Perturbative Domain Wall QCD</i>
Hartmut Wittig	11	EuroFlavour06, 2-4 November 2006, Barcelona, Spain, WG2, <i>Corrections to the interquark potential: A lattice perspective</i>
Miho Koma	11	XXV International Symposium on Lattice Field Theory (Lattice 2007), 30 Jul - 4 Aug 2007, Regensburg, Germany, <i>Relativistic correction to the static potential at $O(1/m)$</i>

3.4 General Networking

During the reporting period the FLAVIANet nodes have pursued an active scientific exchange. Here we list the visits focusing on research; visits devoted to training are listed in the Training Report.

Name	from Node no.	to Node no.	dates
Catalina Espinoza	1	3	17/7/2007 – 17/11/2007
Christoph Haefeli	1	9	18/12/2006 – 7/1/2007
	1	11	22/1/2007 – 24/1/2007
	1	9	2/4/2007 – 2/5/2007
Pilar Hernández	1	9	1/7/2007 – 15/8/2007
Silvia Necco	1	9	2/7/2007 – 28/07/2007
	1	9	19/11/2007 – 3/12/2006
	1	11	18/6/2007 – 22/06/2007
Antonio Pich	1	9	17/7/2007 – 27/7/2007
Matthias Jamin	2	4	13/6
Joaquim Matias	2	12	16/4
Joaquim Prades	2	1	15/1-20/1
	2	12	1/1-31/11
Rafel Escribano	2	5	27/3
	2	5	5/7
Lluís Garrido	2	5	15/3-16/3
	2	5	25/4-25/4
	2	5	5/6-8/6
	2	5	10/7-13/7
	2	5	23/7-27/7
Ricardo Graciani	2	5	27/2

	2	5	10/5 - 18/5
	2	5	25/6-28/6
	2	5	31/7-3/8
	2	5	13/8-16/8
Felix Schwab	2	4	5/4
Martin Beneke	4	11 (Bonn)	7/5
	4	11 (Mainz)	12/6
Monika Blanke	4	3 (Durham)	21/6 - 22/6
Cailin Farrell	4	3 (Durham)	12/2 - 17/2
Agnieszka Grzelinska	4	5 (Frascati)	23/6 - 7/7
	4	6 (Katowice)	11/4 - 18/4 and 3/9 - 14/9
	4	1 (Valencia)	27/3 - 3/4
Andre Hoang	4	1 (Valencia)	6/11 - 10/11
	4	9 (Zurich)	6/11 - 10/11
Thomas Mannel	4	5 (Frascati)	13/11 - 15/11
Ulrich Nierste	4	11 (Mainz)	15/11
Anton Poschenrieder	4	3 (Durham)	29/11 - 2/12
Christoph Reißer	4	3 (Durham)	10/10 - 14/10
Maximilian Stahlhofen	4	1 (Valencia)	6/11 - 10/11
Stéphanie Trine	4	5 (Frascati)	21/5 - 26/5
N. Brambilla	5	1	April–August 2007
P. Colangelo	5	9	October 2007 (1 week)
F. De Fazio	5	3	February 2007 (1 week)
R. Frezzotti	5	11	August 2007 (1 week)
G. Isidori	5	12	March 2007 (1 week)
F. Jugeau	5	1	February 2007 (1 week)
G.C. Rossi	5	11	January 2007 (1 week)
G.C. Rossi	5	11	July–August 2007
L. Silvestrini	5	9	May 2007 (1 week)
L. Silvestrini	5	12	March 2007 (1 week)
A. Vairo	5	1	April–August 2007
Henryk Czyż	6	5	11/10/06 - 26/10/06
	6	5	24/06/07 - 27/06/07
	6	5	15/07/07 - 30/07/07
	6	5	15/09/07 - 30/09/07
	6	4	22/11/06 - 22/12/06
	6	4	07/01/07 - 13/02/07
Janusz Gluza	6	11	05/02/07 - 09/02/07
	6	11	22/07/07 - 27/07/07
	6	5	25/06/07 - 26/06/07
Maria Krawczyk	6	9	08/10/06 - 12/10/06
	6	9	26/03/07 - 31/03/07
	6	4	05/02/07 - 08/02/07

Mikolaj Misiak	6	4	24/09/07 -26/09/07
	6	9	09/09/07 - 23/09/07
Agnieszka Wapienik	6	4	22/11/06 - 22/12/06
	6	4	07/01/07 - 13/02/07
Mikko Sainio	7	9	7-8/12/2006
Johan Bijmans	7	11 (Mainz)	16-17/1/2007
Jan Eeg	7	10 (Ljubljana)	8-26/1/2007
Emilie Passemar	8	2	2-7 Nov 2006
Sébastien Descotes-Genon	8	11	5-7 Mar 2007
Marc Knecht	8	11	5-7 Mar 2007
Jan Stern	8	11	5-7 Mar 2007
Damir Becirevic	8	9	Sep 2007
Roland Kaiser	8	11	20 Nov - 1 Dec 2006
Hagop Szadjian	8	1	April 2007
Stefan Dürr	9	3	24.1.07 – 26.1.07
Christoph Greub	9	11	1.3.07 – 31.7.07
Christopher Smith	9	3	2.5.07 – 4.5.07
Helmut Neufeld	10	5	17-23 May 2007
Björn Leder	11	9	17/9/07 – 20/9/07
Rainer Sommer	11	5	29/5/07 – 31/5/07

Collaborations among the different nodes have resulted in several joint publications. We present the list of our common publications in the form of a matrix in Tab. 1 in order to display the networking aspect.

3.5 Changes to the schedule

We have moved the second general meeting, *Euro-Flavour07* from month 12 to month 14, because several other conferences in spring and summer have been used for networking, as mentioned in Sects. 3.2. There was further a scheduling conflict with the *4th International Conference On Flavor Physics* in Beijing.

4 Conclusions

FLAVIA*net* members have written roughly 300 papers for refereed journals during the reporting period. It is safe to say that the FLAVIA*net* activity corresponds to at least 2/3 of the scientific output in theoretical flavour physics in Europe. Experimentalists in FLAVIA*net* were involved in numerous analyses of data from BaBar, KLOE and the CERN experiments. The visibility of FLAVIA*net* research at international conferences is evident from the talks listed in Sect. 3.3. Our annual network meeting, *Euro-Flavour06* was a central event of FLAVIA*net*. It was complemented by other workshops and conferences organised by FLAVIA*net* members at their home institutions as described in Sect. 3.3.

FLAVIA*net* has fostered existing and stimulated new transnational scientific cooperations, which resulted in common publications of different nodes (see Tab. 1). The mutual visits listed in Sect. 3.4 have strengthened transnational ties. FLAVIA*net* brings people and their expertises together and actively contributes to a structured European science landscape.

	1	2	3	4	5	6	7	8	9	10	11
1		[4,6,16, 23–25, 29,61]	[29]	[10, 29, 37, 61, 126]	[14, 15, 29, 30, 34–36,61, 126, 147, 161,280]			[14, 15, 29, 61, 210, 281]	[7, 8, 13, 19,29]	[7,29]	[14, 15, 19,29]
2	[4,6,16, 23–25, 29,61]		[29, 42, 43, 62, 105]	[29, 61, 120]	[29, 49, 61, 64, 150]		[65, 66]	[29, 48, 61, 205, 282]	[29]		[29]
3	[29]	[29, 42, 43, 62, 63,105]		[29]	[29]			[29]	[29]		[29]
4	[10, 29, 37, 61, 126]	[29, 61, 120]	[29]		[29, 61, 126, 132, 133, 133, 148, 149, 283–295]	[110, 165, 166, 169]		[29, 61]	[29,165]		[29, 165, 267]
5	[14, 15, 29, 30, 34–36, 61, 126, 147, 161, 280]	[29, 49, 61, 64, 150]	[29]	[29, 61, 126, 132, 133, 133, 148, 149, 283–295]				[14, 15, 29, 61, 143–146, 208, 216, 296–299]	[29, 226, 227, 233, 262, 263]	[249]	[14, 15, 29, 143, 262, 263, 300–305]
6				[110, 165, 166, 169]			[194]		[165,167]		[162–165]
7		[65,66]				[194]			[189]	[173, 174]	
8	[14, 15, 29, 61, 210, 281]	[29, 48, 61, 205, 282]	[29]	[29,61]	[14, 15, 29, 61, 143–146, 208, 216, 296–299]				[29,213]		[14, 15, 29, 202, 211]
9	[7,8,13, 19,29]	[29]	[29]	[29,165]	[29, 226, 227, 233, 262, 263]	[165, 167]	[189]	[29,213]		[249]	[19, 229, 251, 255, 262–264, 272, 300–305]
10	[7,29]				[249]		[173, 174]		[249]		
11	[14, 15, 19,29]	[29]	[29]	[29, 165, 267]	[14, 15, 29, 143, 262, 263, 300–305]	[162–165]		[14, 15, 29, 202, 211]	[19, 229, 251, 255, 262–264, 272, 300–305]		

Table 1: Joint publications of several nodes. Rows and columns correspond to the 11 nodes, the bibliographical items refer to the list of publications in Sect. 2.