

Mesones extraños: burbujas de la memoria

Learning the Bubble Chamber trade: from film to DST

- scanning and measuring (IEPS)

- processing

REAP ? THRESH ? GRIND ? SLICE

- the DST

...many programs (programitas) in between
(CANCIN...)...

- analysis

SUMEX, MINUIT,...

Universidad de Madrid
Facultad de Ciencias

ESTUDIO DE LAS REACCIONES $\bar{p}p \rightarrow K_S^0 K_S^0, K_S^0 K_L^0,$
 $K_S^0 K^\pm \pi^\mp$ A 700 - 750 MeV/c

Memoria presentada por D. Enrique
Fernández Sánchez para optar al
grado de Doctor en Ciencias Físicas.

Co-directed by:

Manuel Aguilar-Benítez

Juan Antonio Rubio

→ Measurement of the cross-sections for the reactions

$$\bar{p} p \rightarrow K_S^0 K_S^0$$

$$\bar{p} p \rightarrow K_S^0 K_L^0$$

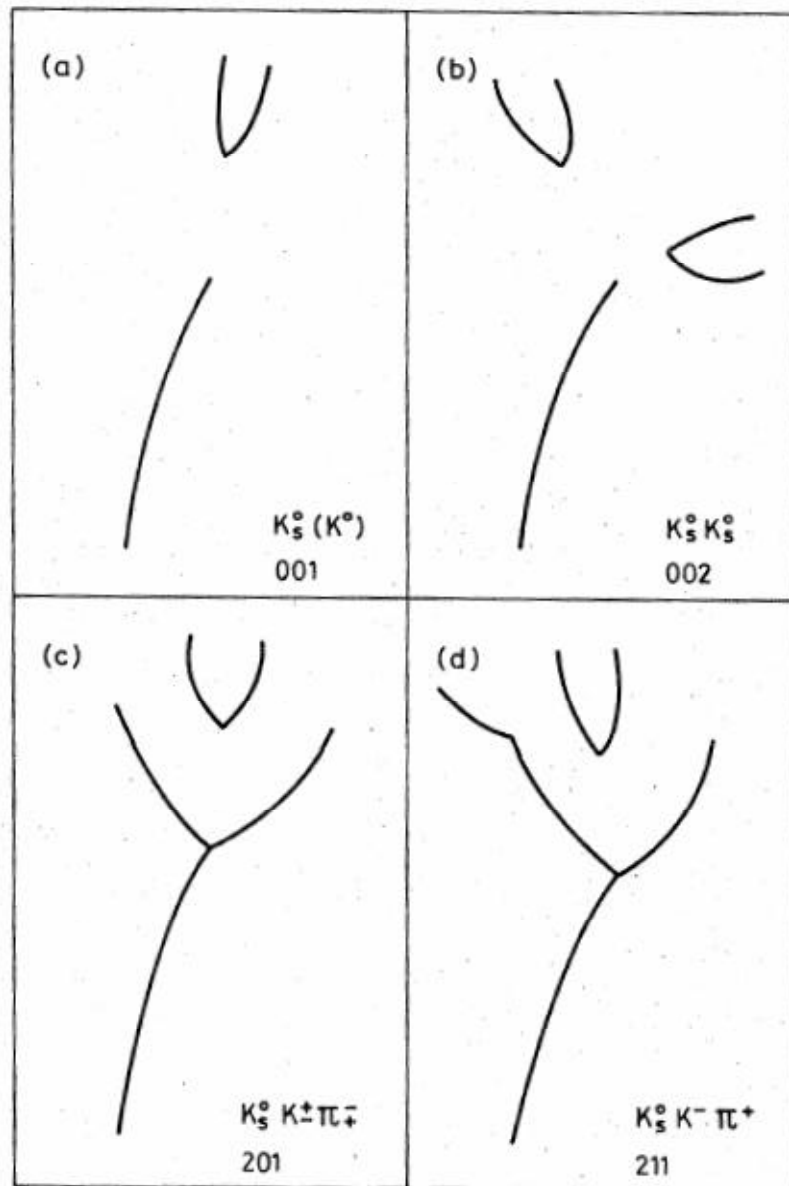
→ Measurement of the differential cross-sections and partial-wave analysis of the initial-state.

→ Analysis of the reaction.

$$\bar{p} p \rightarrow K_S^0 K^\pm \mathbf{p}^\mp$$

to measure the **mass-difference** between the charged and neutral $K^*(890)$ mesons.

→ Study of the production of A_2 and $K^*(1420)$ resonances.



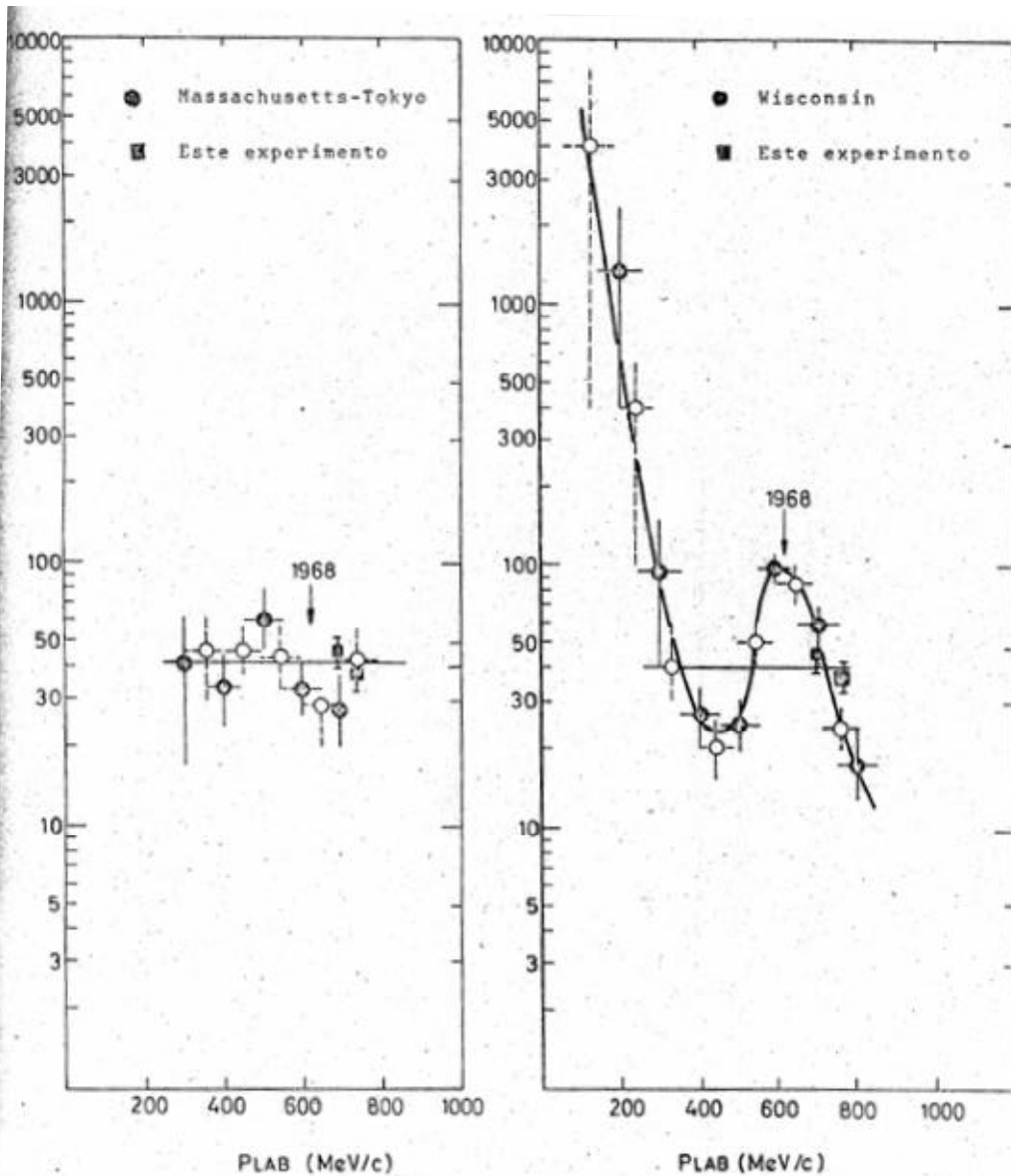


Fig. 3.1.- Sección eficaz $\bar{p}p \rightarrow K_S^0 K_S^0$ calculada en este experimento, comparada con las encontradas por: (a) Colaboración Massachusetts-Tokyo (Ref. 22) y (b) Grupo de Wisconsin (Ref. 10)

700 MeV/c

8009 events in total

4 $K_S K_S$

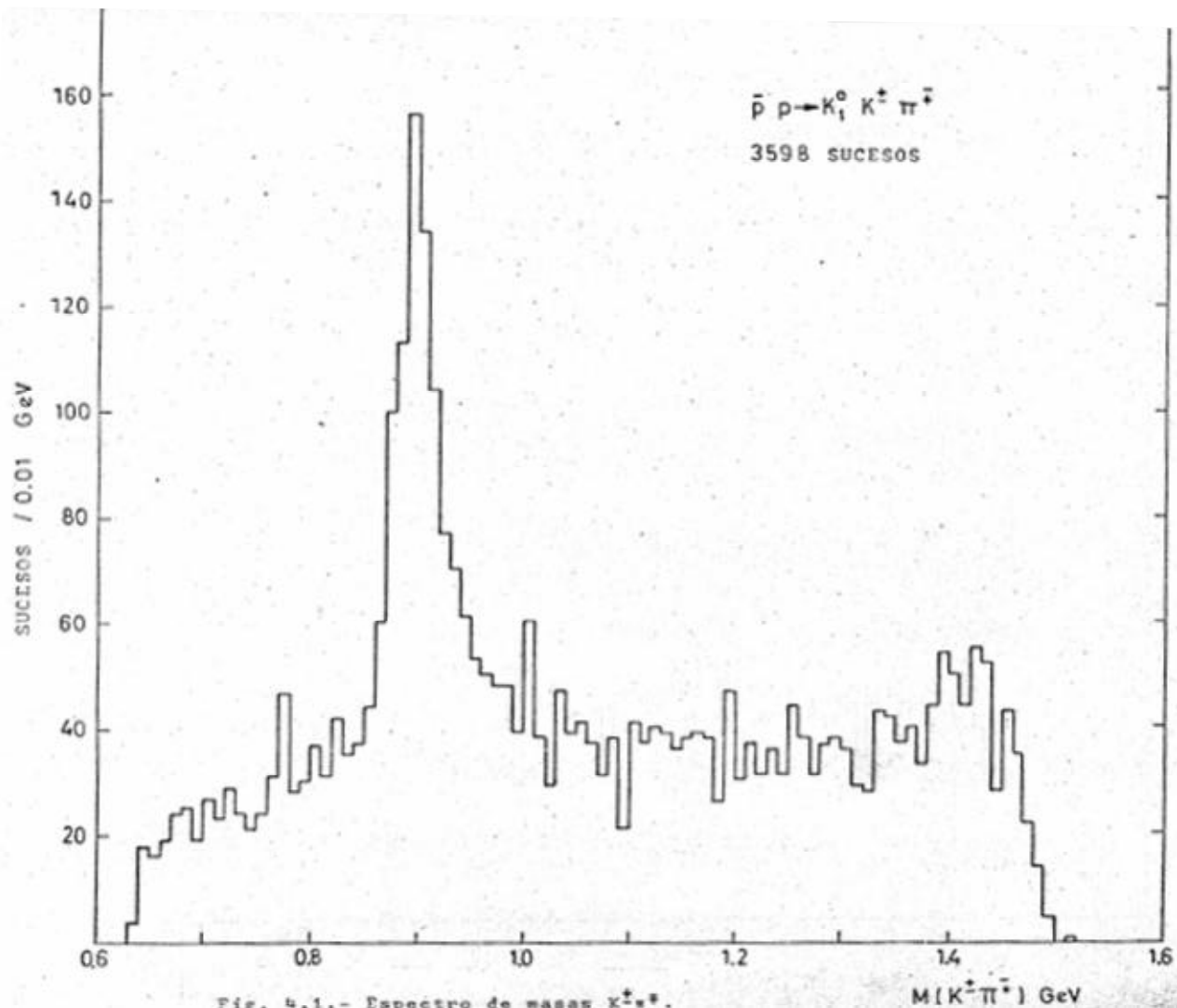
125 $K_S (K)$

750 MeV/c

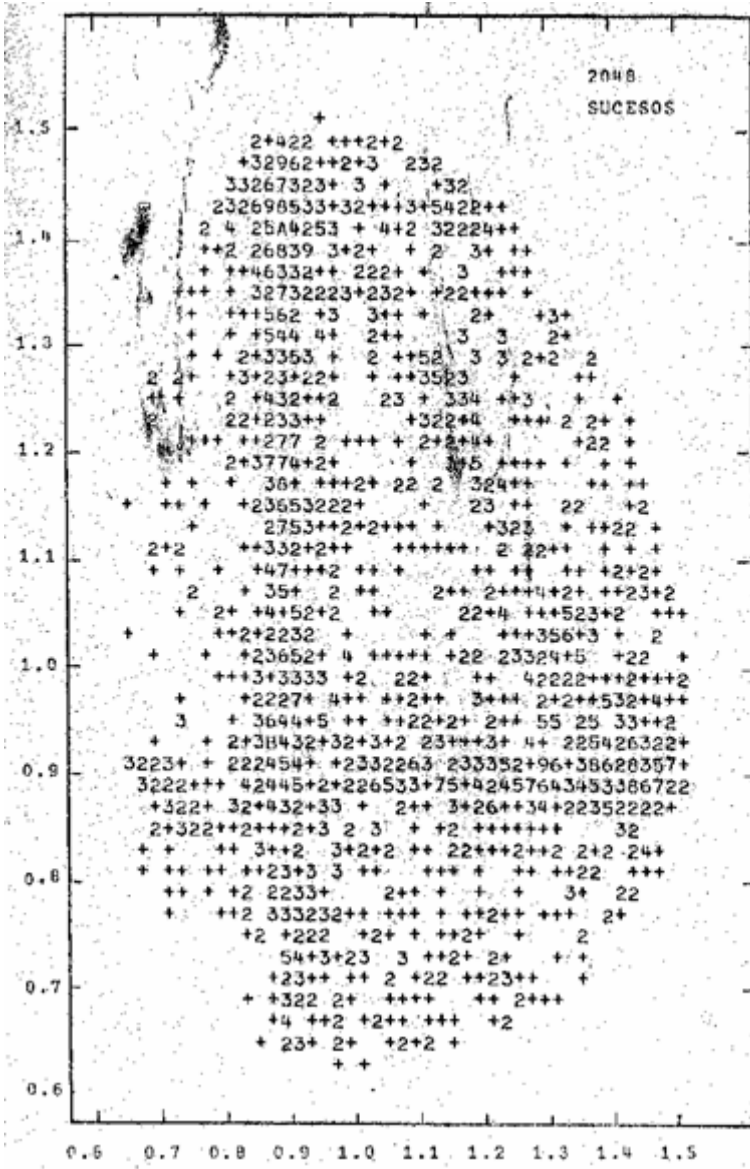
10214 events in total

15 $K_S K_S$

164 $K_S (K)$



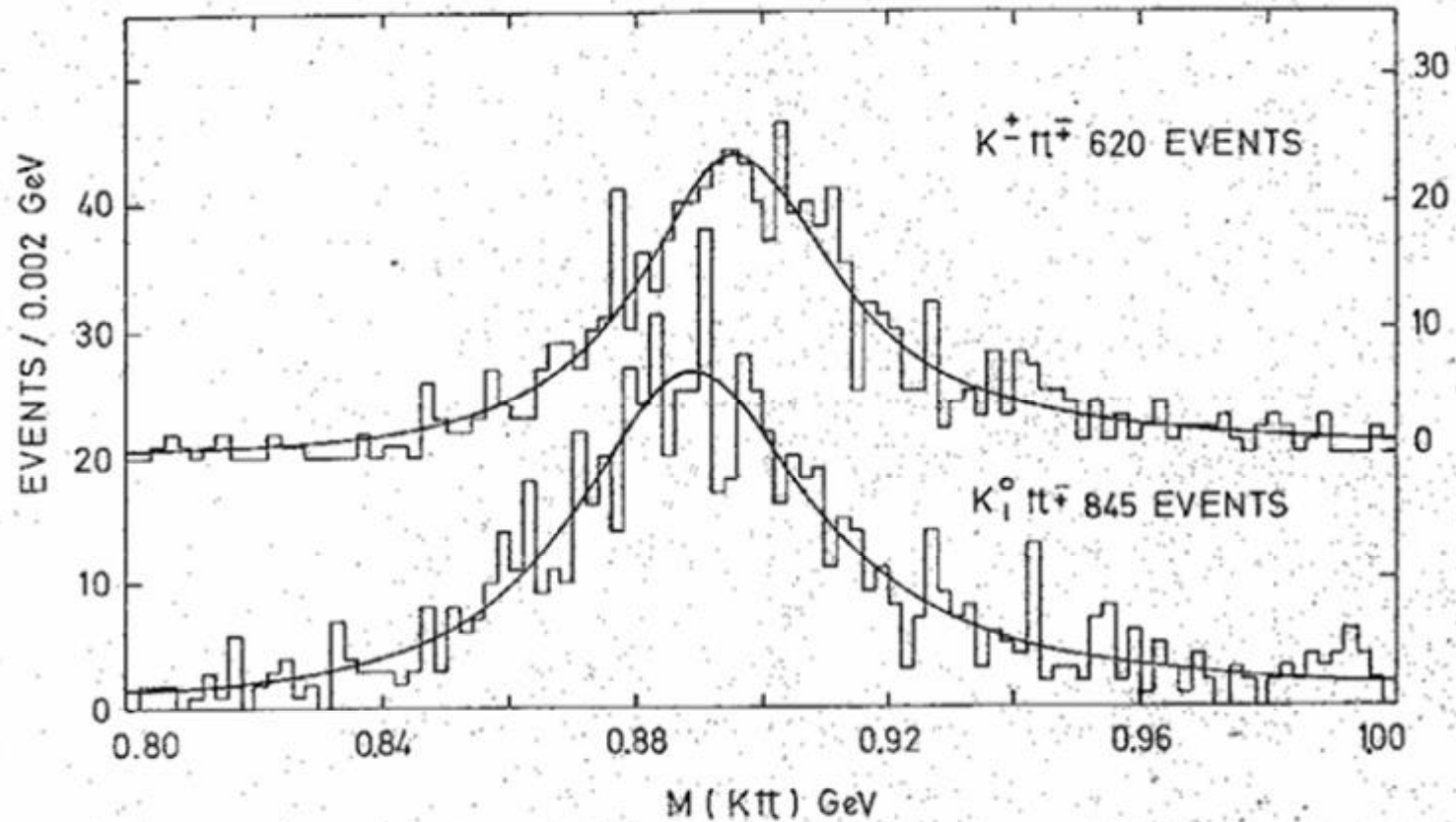
2046
 SUCCESOS



$M(K^\pm p^\mp)$

$M(K_s \pi^\pm)$

$$M(K^{*0}) - M(K^{*\pm}) = 6.4 \pm 2.2 \text{ MeV}/c^2$$



During the early 70's the JEN group maintained experimental high energy physics in Spain. Without that group it would have disappeared completely.

Despite the difficulties, the work done at JEN was of high quality, and this thanks to the enthusiasm and dedication of its members (Manuel Aguilar, Antonio Ferrando, Pedro Ladrón, Rafael Llosá, Juan Antonio Rubio, Miguel Tomás).

The “quinta del 71” made an impact on the group, scientific and sociological. Other new students came afterwards, and this has been maintained until today.

It is only on retrospective (like now) that one can see the importance of seemingly insignificant decisions. With time I have learned to appreciate how important those years were, not only for me, but I believe for all of us. I cannot but warmly thank Manuel and Juan Antonio, both present here, for the decisions they made, when they made them.