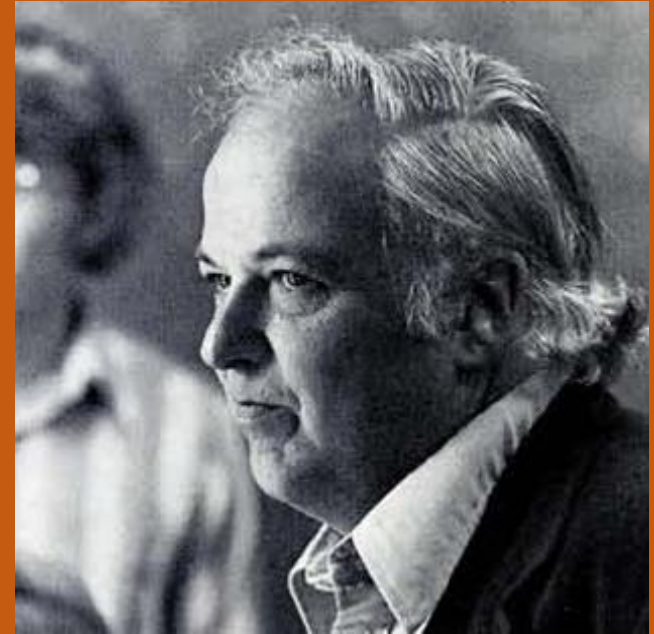


Открытие  $J/\psi$  мезона

Samuel Ting, BNL



Burton Richter, SLAC



# BNL

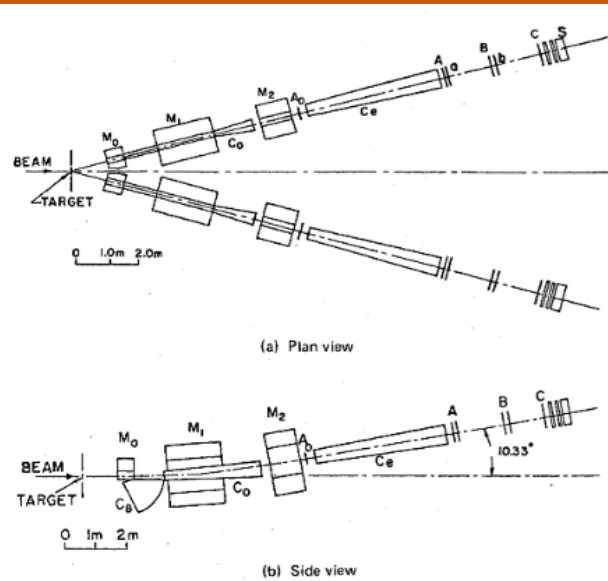
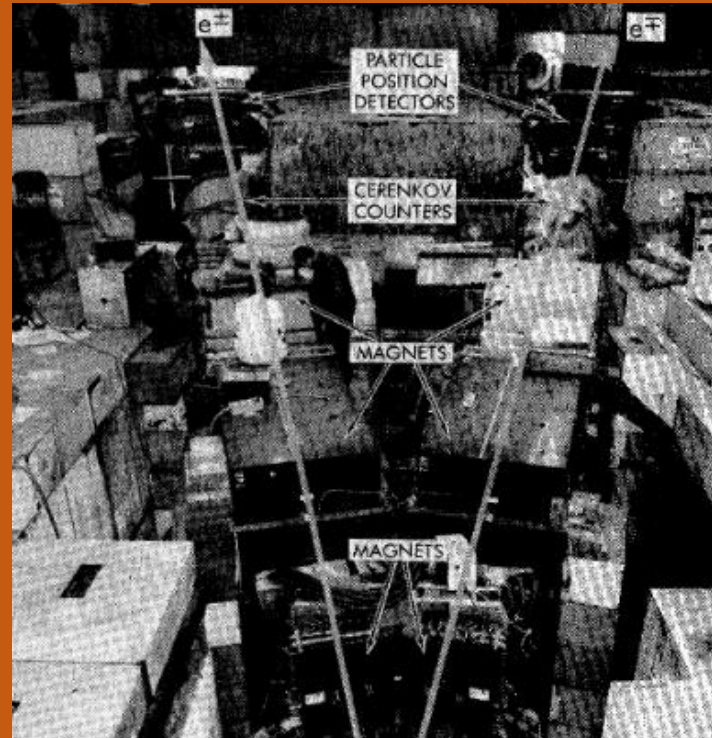
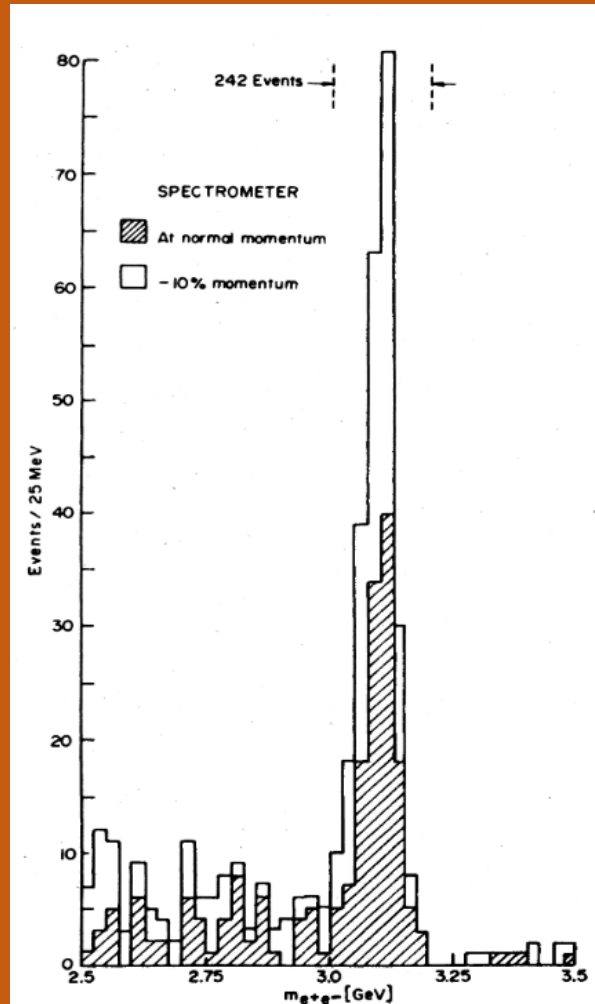


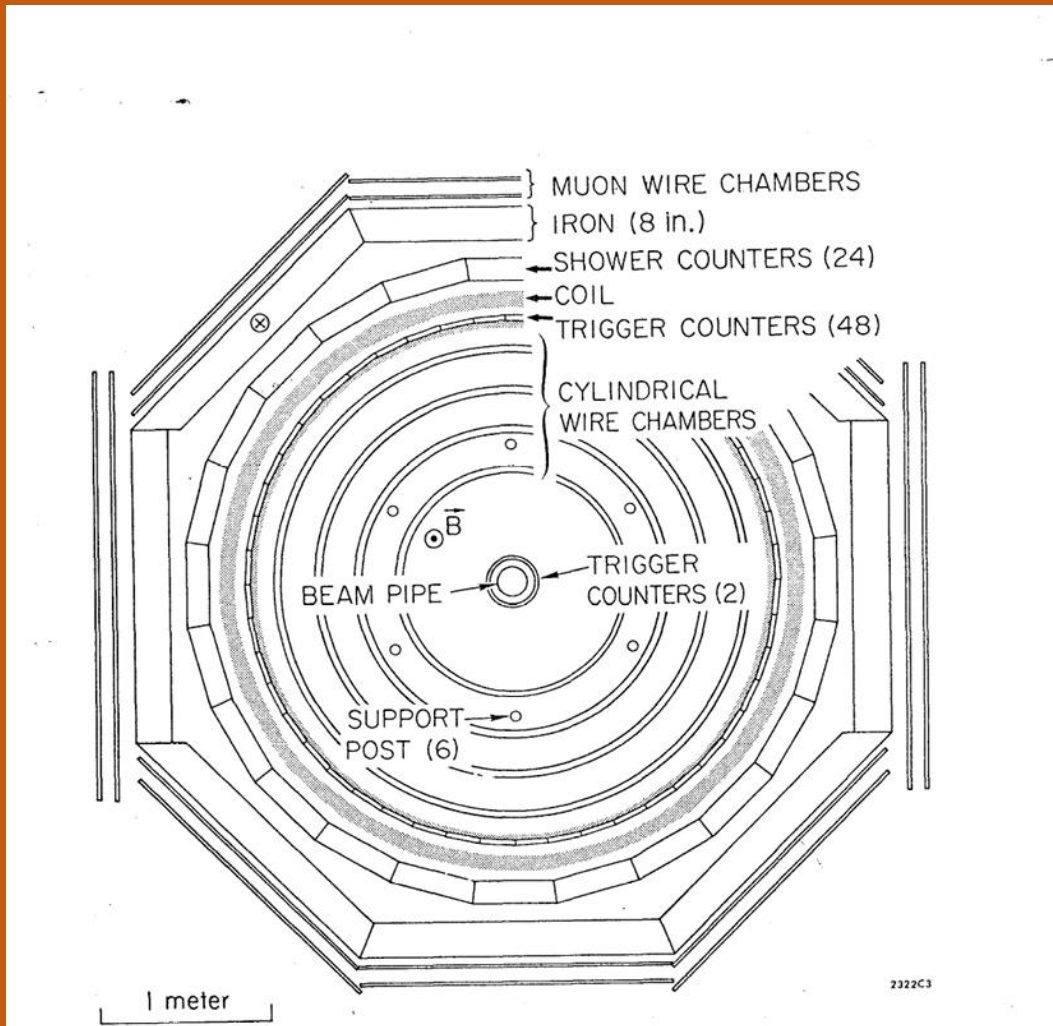
FIG. 5. Schematic diagram of the experimental setup for the double-arm spectrometer used in our discovery of the  $J$  particle.  $M_0$ ,  $M_1$ , and  $M_2$  are dipole magnets;  $A_0$ ,  $A$ ,  $B$ , and  $C$  are 8000-wire proportional chambers;  $a$  and  $b$  are each  $8 \times 8$  hodoscopes;  $S$  designates three banks of lead-glass and shower counters;  $C_B$ ,  $C_0$ , and  $C_e$  are gas Čerenkov counters.



# BNL результат



# SLAC



$e^+ + e^- \rightarrow$  адроны

$e^+ + e^- \rightarrow e^+ + e^-$

$e^+ + e^- \rightarrow \mu^+ + \mu^-$

# SLAC результаты

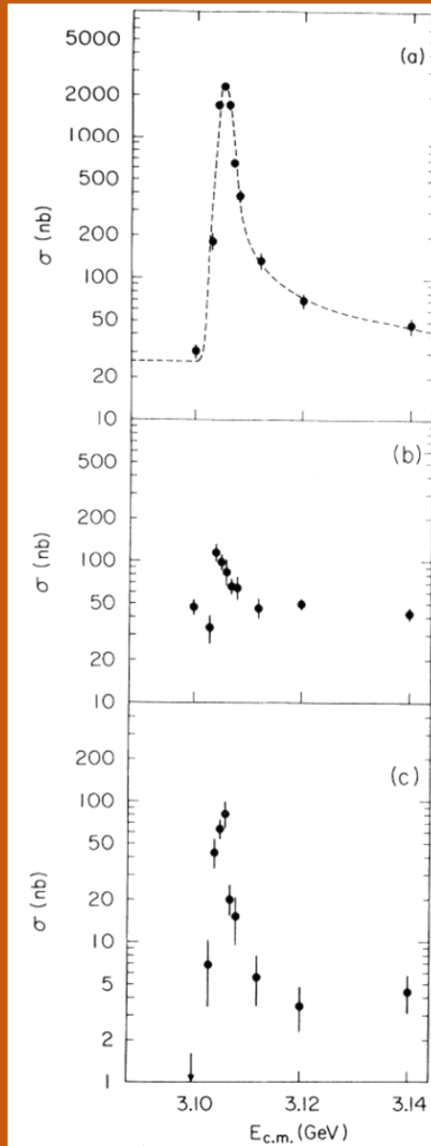
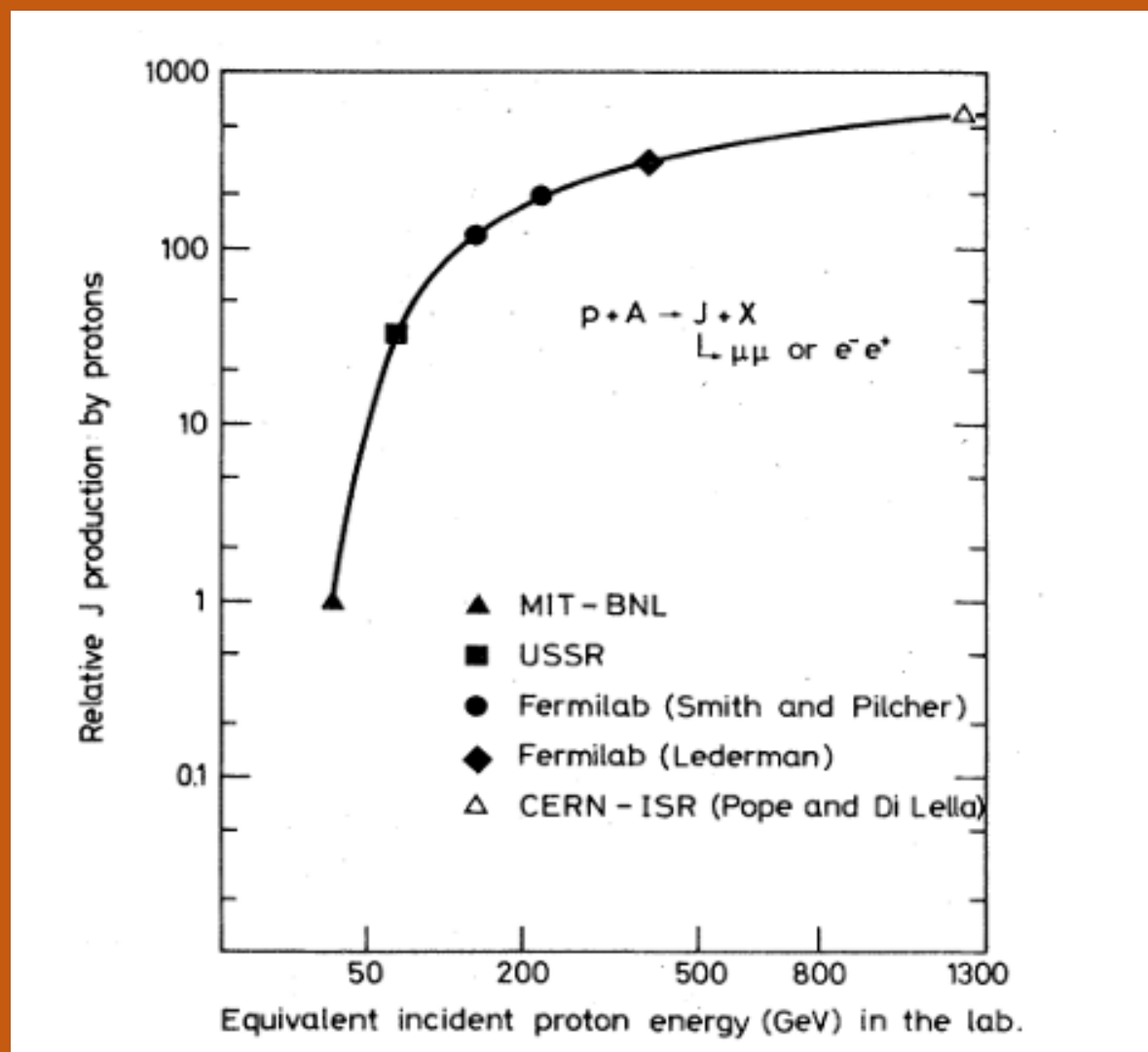


FIG. 1. Cross section versus energy for (a) multi-hadron final states, (b)  $e^+e^-$  final states, and (c)  $\mu^+\mu^-$ ,  $\pi^+\pi^-$ , and  $K^+K^0$  final states. The curve in (a) is the expected shape of a  $\delta$ -function resonance folded with the Gaussian energy spread of the beams and including radiative processes. The cross sections shown in (b) and (c) are integrated over the detector acceptance. The total hadron cross section, (a), has been corrected for detection efficiency.

# Итоги

- Получен узкий пик при энергии  $\approx 3.1$  ГэВ
- Его ширина меньше 2 МэВ. Значит время жизни этого резонанса приблизительно  $\sim 10^{-20}$  с, тогда как характерное время сильного взаимодействия  $\sim 10^{-23}$  с

# Дополнительные слайды (1)





# Дополнительные слайды (2)

