

# In Memory



**David Vernon Bugg  
(1935.7.16 - 2018.4.4)**

**Education: B.A. (1957), Ph.D. (1961), University of Cambridge**

**Position: Professor, Queen Mary University of London since 1970**

**Award: Rutherford Medal and Prize of the Institute of Physics, UK, 1996  
for meson spectroscopy**

Observation of two  $J^{PC} = 0^{++}$  isoscalar resonances at 1365 and 1520 MeV

Crystal Barrel Collaboration

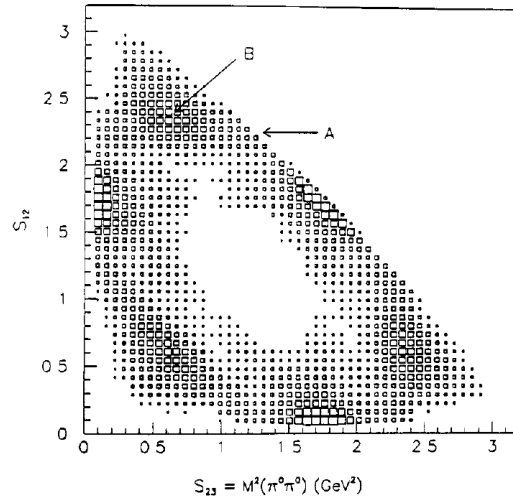


Fig 1 Dalitz plot for  $\bar{p}p \rightarrow 3\pi^0$  at rest, from ref [2]

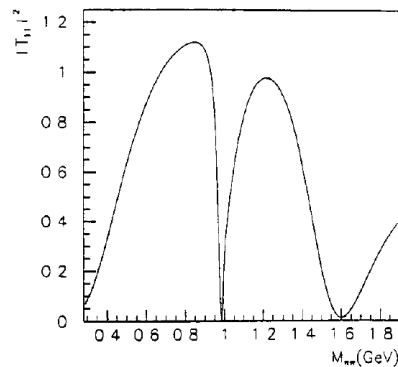


Fig 2  $|T_{11}|^2$ , the  $\pi\pi$  S-wave elastic scattering intensity

Further amplitude analysis of  $J/\Psi \rightarrow \gamma(\pi^+\pi^-\pi^+\pi^-)$

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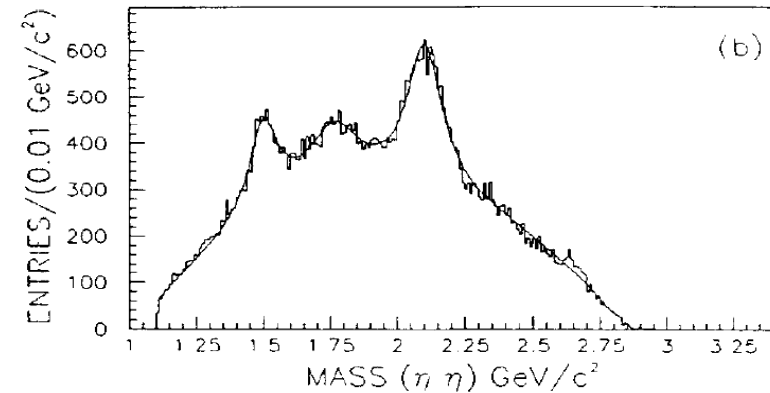
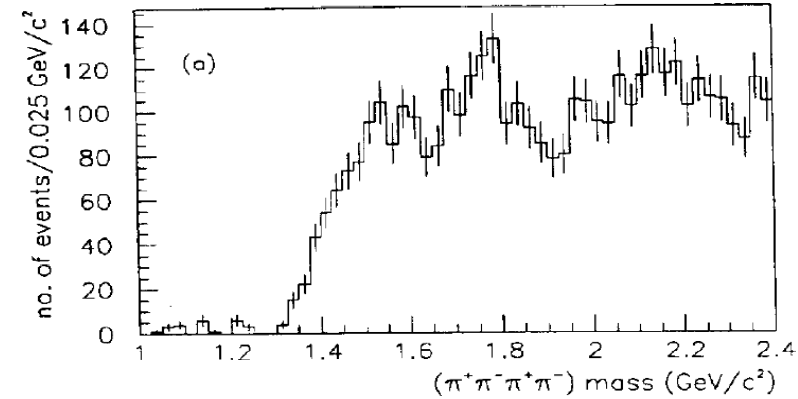


Fig. 1. (a) The  $4\pi$  mass spectrum from Mark III data on  $J/\Psi \rightarrow \gamma(4\pi)$ , Ref. [7]; (b) The  $\eta\eta$  mass spectrum from  $\bar{p}p \rightarrow \eta\eta\pi^0$  at 3.0 GeV CM energy, Ref. [9].

## In collaboration with BES:

“Partial wave analysis of  $J/\psi \rightarrow \gamma K^+ K^- \pi^0$ ”, Phys. Lett. B440 (1998) 217

“Partial wave analysis of  $J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$ ”, Phys. Lett. B440 (1999) 217

“Partial wave analysis of  $J/\psi \rightarrow \gamma(K^+ K^- \pi^+ \pi^-)$ ”, Phys. Lett. B472 (2000) 200

“Partial wave analysis of  $J/\psi \rightarrow \gamma(\pi^+ \pi^- \pi^+ \pi^-)$ ”, Phys. Lett. B472 (2000) 208

“Partial wave analysis of  $J/\psi \rightarrow \gamma(K^+ K_S \pi^-)$ ”, Phys. Lett. B476 (2000) 25

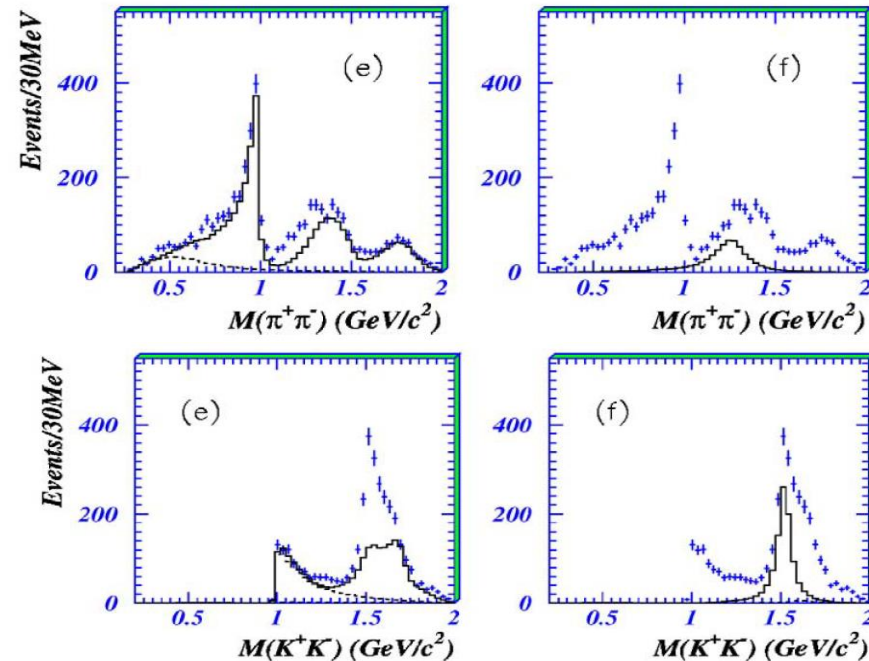
“Partial Wave Analyses of  $J/\psi \rightarrow \gamma K^+ K^-$  and  $\gamma K_S K_S$ ”, Phys. Rev. D68 (2003) 05200

“Partial wave analysis of  $J/\psi \rightarrow \gamma \pi^+ \pi^-$  and  $\gamma \pi^0 \pi^0$ ”, Phys. Lett. B642 (2006) 441

“The  $\sigma$  pole in  $J/\psi \rightarrow \omega \pi^+ \pi^-$ ”, Phys. Lett. B598 (2004) 149

“Study of  $J/\psi \rightarrow \omega K^+ K^-$ ”, Phys. Lett. B603 (2004) 138

“Resonances in  $J/\psi \rightarrow \phi \pi^+ \pi^-$  and  $\phi K^+ K^-$ ”, Phys. Lett. B607 (2005) 243



# In Memory of Mike Pennington

