THE $K_2(1770)$ AND THE $K_2(1820)$

A partial-wave analysis of the $K^-\omega$ system based on about $100,000~K^-p\to K^-\omega p$ events (ASTON 93) gives evidence for two $q\bar{q}$ D-wave states near 1.8 GeV. A previous analysis based on about 200,000 diffractively produced $K^-p\to K^-\pi^+\pi^-p$ events (DAUM 81) gave evidence for two $J^P=2^-$ states in this region, with masses $\sim 1780~{\rm MeV}$ and $\sim 1840~{\rm MeV}$ and widths $\sim 200~{\rm MeV}$, in good agreement with the results of ASTON 93. In contrast, the masses obtained using a single resonance do not agree well: ASTON 93 obtains $1728\pm7~{\rm MeV}$, while DAUM 81 estimates $\sim 1820~{\rm MeV}$. We conclude that there are indeed two K_2 resonances here.

We list under the $K_2(1770)$ other measurements that do not resolve the two-resonance structure of the enhancement.

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