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

A partial-wave analysis of the $K^-\omega$ system based on about 100,000 $K^-p \rightarrow K^-\omega p$ 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 $K^-p \rightarrow K^-\pi^+\pi^-p$ events (DAUM 81) gave evidence for two $J^P = 2^-$ states in this region, with masses $\sim 1780$ MeV and $\sim 1840$ MeV and widths $\sim 200$ 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 $1728 \pm 7$ MeV, while DAUM 81 estimates $\sim 1820$ 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.