



national accelerator laboratory

On the New Narrow Resonances

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Abstract

After considering several alternatives, we conclude that the most likely explanation for the new particles is that they are bound states of a new quark-antiquark pair.

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We have completed an exhaustive and searching study of the possible interpretations of the new bosons discovered recently at SPEAR and BNL.¹ It is our nearly inescapable conclusion that the new particles are quark-antiquark boundstates of a new, fourth quark. We call the new quantum number carried by the fourth quark Panda², and suggest the name Pandamonium for the new particles. The quark configuration of the lowest-mass vector state is depicted in Fig. 1.

Note added: While this paper was in preparation, we learned that similar results have been obtained by several other workers. The length limitation on Letters submitted to this Journal discourages us from giving a complete set of references.

References

1. J. J. Aubert, et al., Phys. Rev. Lett. 33, 1404 (1974).
J.-E. Augustin, et al., ibid., p. 1406, and private communication.
2. We choose this name because of the panda's well-known shyness, and tendency to stay among his own kind. The great mass of the giant panda has also influenced our thinking.

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