$J/\psi$  discovery

November revolution

One day in early November of 1974 the words came from west coast that some experiment on west coast has discovered a new particle with mass around 3 Gev or so. In those days, the news about discovery of a new particle is not uncommon. But this particle has the unusual property that its decay with is very narrow and much narrower that anything we have seen before. The rush for an explanation was on. Many different mechanism have been offered, ranging from bound states of some new fermions to weak W boson,..., etc.

The discovery of this unusual state has a interesting story too. The discovery was annouced "at same time" by a group in SLAC working on the electornpositron colliding colliding machine led by Burt Richter and by a group working in Brookhaveen National Laboratory in Long Island, New York led by Samual C. C. Ting of MIT. According to Ming Chen, who was a junior faculty working under Ting. They were working on the reaction where proton hitting a unanium target and observe  $\mu^+\mu^-$  in the final state along with other particles. Prof. Chen was in charge of the data analysis and he found an unusual feature that there are many events clustered around certain energy for  $\mu^+\mu$  pair. First he thought there is probably some errors in the the computer programing. In those days computer hardware was not very advanced and punched cards were were used to imput the program probabaly written in Fortran langauge.

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(1) Pontecorvo, 8., Soviet Physics JETP ~,
984 (1968) made first proposal of neutrino oscillations as an explanation of the solar neutrino puzzle.