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Dibaryon Signals in NN Scattering Data and Further Measurement at COSY, LEPS and CSR

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摘要 The $N\Delta$ and $\Delta\Delta$ dibaryon resonances are studied by calculating the NN scattering phase shifts with explicitly coupling these dibaryon channels in a multi channel coupling calculation with two quark models. These quark models, the chiral quark model and quark delocalization color screening model, describe the NN S, D wave phase shifts below the n production threshold quantitatively well. Both quark models predict the 1D2 resonance discovered in NN partial wave phase shift analysis and the J=1 or 3 isoscalar resonance recently reported by CELSIUS WASA Collaboration are $N\Delta_{5S2}$ and $\Delta\Delta_{7S3}$ resonance, respectively. Further measurements at COSY, LEPS and Lanzhou Cooling Storage Ring(CSR) to check the $\Delta\Delta$ resonance are discussed.

关键词 [nucleon](#) [nucleon scattering](#) [dibaryon](#) [quark model](#)

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