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$N\Delta$ and $\Delta\Delta$ dibaryons revisited

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Three-body hadronic models with separable pairwise interactions are formulated and solved to calculate resonance masses and widths of $L = 0$ $N\Delta$ and $\Delta\Delta$ dibaryons using relativistic kinematics. For $N\Delta$, $I(J^P) = 1(2^+)$ and $2(1^+)$ resonances slightly below threshold are found by solving πNN Faddeev equations. For $\Delta\Delta$, several resonances below threshold are found by solving $\pi N\Delta$ Faddeev equations in which the $N\Delta$ interaction is dominated by the $1(2^+)$ and $2(1^+)$ resonating channels. The lowest $\Delta\Delta$ dibaryon resonances found are for $I(J^P) = 0(3^+)$ and $3(0^+)$, the former agreeing well both in mass and in width with the relatively narrow $calD_{03}(2370)$ resonance observed recently by the WASA@COSY Collaboration. Its spin-isospin symmetric partner
$calD_{30}$ is predicted with mass around 2.4 GeV and width about 80 MeV.

Primary author: Prof. GAL, Avraham (Hebrew University, Jerusalem)

Presenter: Prof. GAL, Avraham (Hebrew University, Jerusalem)