

The Hebrew University of Jerusalem , Nuclear Physics Seminar

Prof. Avraham Gal

Racah Institute of Physics, Hebrew University of Jerusalem

Racah Institute of Physics Moadon room at Pavilion 9

"Pion-assisted Nucleon-Delta and Delta-Delta dibaryons"

Three-body hadronic models are formulated and solved to calculate resonance masses and widths of $L=0$ Nucleon-Delta and Delta-Delta dibaryons using relativistic kinematics. For Nucleon-Delta, $I(JP)=1(2+)$ and $2(1+)$ resonances slightly below threshold are found by solving π -N-N Faddeev equations. For Delta-Delta, several resonances below threshold are found by solving π -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 $I(JP)=0(3+)$ and $3(0+)$, the former agreeing well both in mass as well as in width with the relatively narrow $D_{\{03\}}(2370)$ resonance observed recently by the WASA-at-COSY Collaboration.