

# Coherent Proton–Neutron Contribution to Octupole Correlations in $^{114}\text{Xe}$ studied by inelastic proton and deuteron scattering

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This letter of intent is aiming to investigate the collective nature of low lying Octupole states, in the region of the  $N=Z$   $^{112}\text{Ba}$ , by measuring the octupole deformation and the neutron and proton contribution to the octupole excitation by means of the isovector ( $p,p'$ ) and isoscalar ( $d,d'$ ) reactions, in inverse-kinematics, of secondary BigRIPS beams in the target position of the DALI2 - BigRIPS/ZeroDegree setup. The goal is to investigate the nature of the enhanced octupoles located in the vicinity of the  $N=Z$  line close to  $^{112}\text{Ba}$  and in particular of the  $^{114}\text{Xe}$  octupole state, the lightest one with sufficient production yield

**Presenter:** Mr HUYUK, Tayfun (IFIC - Instituto de Fisica Corpuscular)

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