

OPTICAL MODEL WITH MULTIPLE BAND COUPLING USING A SOFT ROTATOR MODEL (FOR EVEN-EVEN ACTINIDES)

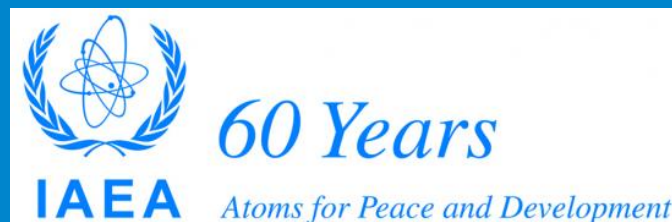
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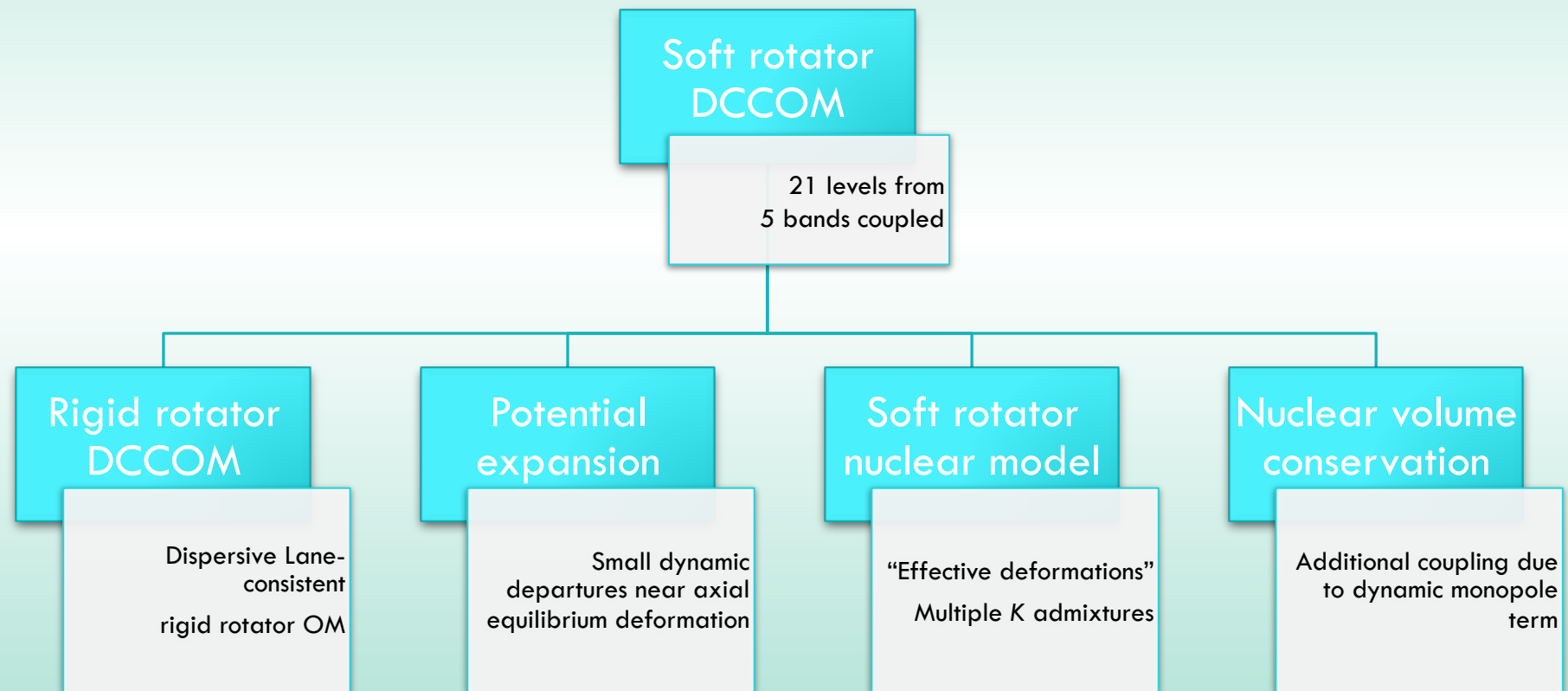
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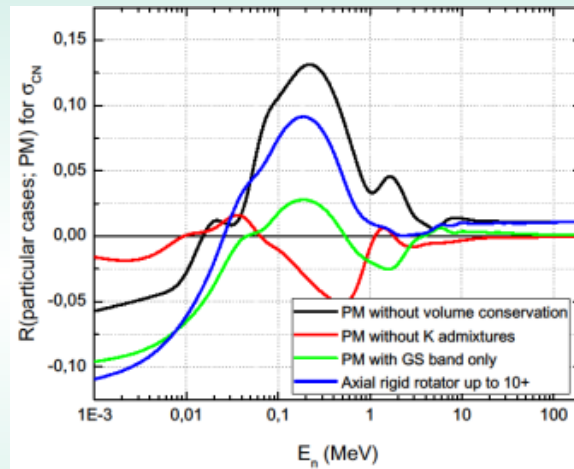
APPROACH



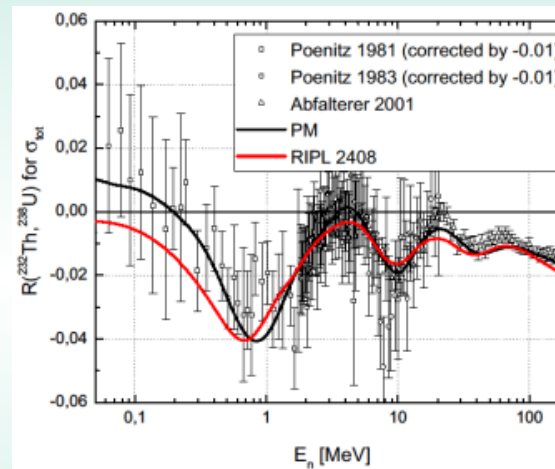
NEW MODEL FEATURES

- 5 rotational bands (21 levels) are coupled: GS, β^- , γ^- , non-axial, negative parity bands (almost all levels below 1.2 MeV)
- The inter-band couplings – from soft rotator model (same number of adjustable optical potential parameters as for rigid rotator OM!)
- Nuclear volume conservation and multiple K mixing for excited states change σ_{tot} significantly
- Good description of precise experimental data such as ^{232}Th to ^{238}U σ_{tot} ratio with $E_n = 50 \text{ keV} \dots 200 \text{ MeV}$

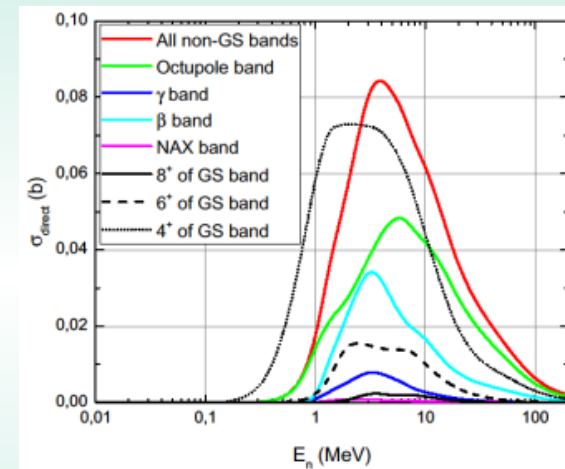
CALCULATIONS



New features
effects on σ_{CN} in ^{238}U



$^{232}\text{Th}/^{238}\text{U}$ σ_{tot} ratio



^{238}U direct
level excitation

Welcome to poster P050