

***Ab Initio* Symmetry Adapted Shell Model Studies**

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Exploiting exact and special symmetries to unmask simplicity within complexity, which remains the holy grail of nuclear physics, will be considered within its historical context and as it is evolving via 21st Century *ab initio* methods, including some early results linked to the internal structure of nucleons.

Some results for light to medium mass nuclei will be shown, and a possible path forward for the consideration of heavier systems will be proffered via a logical extension of the theory that incorporates deformation in an interesting way that can best be described as a Many-particle Shell-model Generalization of the Nilsson Model.