

New perspectives on the atomic nucleus

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Our knowledge of the atomic nucleus is improving at a rapid pace. New insights are emerging in how neutrons and protons interact within the nucleus to produce the simple shell structure as well as a host of quantum phenomena such as clustering and rotating deformed shapes. We are entering an era of high-precision theory and experiment that offers a chance to understand all these phenomena from the underlying theory of the strong interactions, quantum chromodynamics (QCD). I will survey this recent progress and offer thoughts on future directions addressing many outstanding challenges.