



Old Dominion University

Department of Physics

Colloquium

Thursday, February 23, 2017

"Partons to protons: A lattice QCD guide to the Subatomic Universe"

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Abstract: Protons and neutrons make up most of the mass of the visible Universe, but our knowledge of their internal structure is far from complete. Quantum chromodynamics (QCD), the theory of the strong force, provides the mathematical framework that connects protons and neutrons to their constituent quarks and gluons (partons), but QCD cannot be solved analytically. Instead, we must use lattice QCD, in which we discretise spacetime and study QCD numerically, usually on large supercomputers. I will introduce lattice QCD, discuss our need for a numerical approach to QCD, and highlight just three of the many ways in which lattice QCD contributes to our understanding of particle and nuclear physics, starting with partons and ending with protons. Adorable

Presentation: **PSB 1100 @ 12:30 pm**
Refreshments: **PSB Atrium @12:00 pm**

All interested persons are cordially invited to attend.