
Lattice QCD for Nuclear Physics

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Layout of Talks

- **Lecture 1: QCD on the Lattice**
 - Pure Gauge QCD
 - Adiabatic potential and Confinement
 - Adding quarks
 - “Benchmarking QCD” – low-lying hadron spectrum
- **Lecture 2: Spectroscopy and lattice QCD**
 - A spectrum recipe book
 - Resonances
 - pure-gauge glueball spectrum
 - Spectrum of mesons and baryons
 - Unstable Particles and Hadronic interactions
- **Lecture 3: Hadron Structure**
 - Hadron Structure Recipe
 - Form Factors, DIS and GPDs
 - New Insights – orbital angular momentum

Suggested Reading

- There are several good and comprehensive textbooks (in reverse chronological order)
 - *Lattice Methods for Quantum Chromodynamics*, Tom Degrund and Carleton DeTar (World Scientific, 2006)
 - *Quantum Fields on the Lattice*, I. Montvay and G. Munster (CUP, 1997)
 - *Lattice Gauge Theories: An Introduction*, H. Rothe (3rd edition, World Scientific, 2005)
- Plenary talks at the annual Lattice Meeting summarize the latest developments in the field, and are always posted on arXiv
 - College of William and Mary, 14-19th July, 2008.