

PAUL SCHERRER INSTITUT



Particle Theory Seminar

C. Ji

TRIUMF

“Nuclear polarization effects in muonic atoms”

Tuesday, February 11, 2014, 11:30

WBGB/021

Abstract:

Nuclear polarizations are QCD effects that contribute to the Lamb shifts in muonic atoms. They need to be provided by theory with high accuracy, in order to extract precise nuclear radii from the muonic atom measurements at PSI. I will talk about how we perform ab-initio calculations of such nuclear polarizations with state-of-the-art nuclear Hamiltonians, with a precision that basically matches the experimental requirement. I will present results for muonic deuterium and 4He , and discuss the uncertainties from both atomic and nuclear physics. I will then discuss the extension to muonic 3He .