

Proton decay matrix element on lattice at physical pion mass

Monday, July 23, 2018 2:20 PM (20 minutes)

Proton decay is one of possible signatures of baryon number violation, which has to exist to explain the baryon asymmetry and the existence of nuclear matter. Proton decays must be mediated through effective low-energy baryon number violating operators made of three quarks and a lepton. We calculate matrix elements of these operators between an initial proton and various final pseudoscalar mesons using the three-point function method. For the first time, we use the 2+1 dynamical flavor domain wall fermions at the physical point for the calculation over the three source-sink separations.

Primary author: YOO, Jun-sik (Stony Brook University)

Presenter: YOO, Jun-sik (Stony Brook University)

Session Classification: Physics beyond the Standard Model

Track Classification: Physics Beyond the Standard Model