

Nucleon Decay Studies at Super-Kamiokande

Thursday, May 12, 2022 2:20 PM (20 minutes)

Searching for proton decay and other baryon number violation processes is an essential and high priority goal of particle physics, closely related to fundamental topics such as baryon asymmetry of the universe, grand unified theories (GUT), and new physics below the GUT scale. With more than 20 years of data-taking and a large fiducial volume, Super-Kamiokande (SK) has presented leading constraints in the key benchmark modes as well as many other modes to cover many possible sources of baryon number violation. In this talk, I will give a summary of nucleon decay searches at SK so far, introduce recent efforts to expand the fiducial volume and to use neutron tagging for background reduction, and discuss the prospects of these analyses at SK-Gd and Hyper-Kamiokande.

Primary author: WAN, Linyan

Presenter: WAN, Linyan

Session Classification: Proton Decay - Parallel

Track Classification: Proton Decay