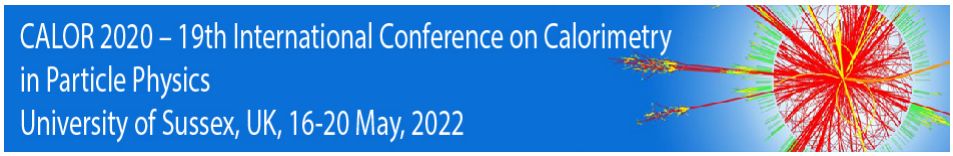

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Hadron-Induced Radiation Damage in Fast Heavy Inorganic Scintillators

Future HEP experiments at the energy and intensity frontiers present stringent challenges to fast and heavy inorganic scintillators in radiation tolerance. Up to 500 Grad and 5×10^{18} n_{eq}/cm^2 of one MeV equivalent neutron fluence are expected by the forward calorimeters at the proposed Future Hadron Circular Collider (FCC-hh). This paper reports results of investigations of neutrons and protons induced radiation damage in fast and heavy inorganic scintillators, such as LYSO:Ce crystals, LuAG:Ce ceramics and BaF_2 crystals for applications in ultracompact, radiation hard, sampling calorimetry and precision time of flight systems. Applications for Gigahertz hard X-ray imaging will also be discussed.

Authors: HU, Chen (California Institue of Technology); ZHANG, Liyuan (California Institute of Technology); ZHU, Ren-Yuan (California Institute of Technology)

Co-authors: KAPUSTINSKY, Jon (Los Alamos National Laboratory); LI, Xuan (Los Alamos National Laboratory); MOCKO, Michael (Los Alamos National Laboratory); WENDER, Steve (Los Alamos National Laboratory); WANG, Zhehui (Los Alamos National Laboratory)

Presenter: ZHANG, Liyuan (California Institute of Technology)