Contribution ID: **24** Type: **not specified**

A Crystal Shashlik Electromagnetic Calorimeter for Future HEP Experiments

Tuesday, May 17, 2016 2:10 PM (20 minutes)

In high energy and nuclear physics experiments, total absorption electromagnetic calorimeters made of inorganic crystals are known for decades for their superb energy resolution and detection efficiency. Significant degradation of crystal performance, however, was observed in a severe radiation environment, such as the LHC. A very compact crystal based shashlik calorimeter was designed for future HEP experiment at an extreme harsh radiation environment, such as the proposed HL-LHC, where thin crystal plates are used as the sensitive medium to reduce the light path length and thus the radiation damage effect. The design of such calorimeter uses tungsten as absorber, radiation hard inorganic crystals, such as LYSO, as active medium, and radiation hard wavelength shifter, such as quartz capillaries, to transport scintillating light to photodetectors. The initial calorimeter design and the performance of prototype modules will be reported. Possible optimization will be discussed.

Primary author: ZHU, Renyuan (California Institute of Technology (US))

Presenter: ZHU, Renyuan (California Institute of Technology (US))

Session Classification: Calorimeters for future accelerator experiments