Geant4 simulations of applications of oriented crystals breaking down the challenges in accelerator physics, particle physics and space science

Project Trillion

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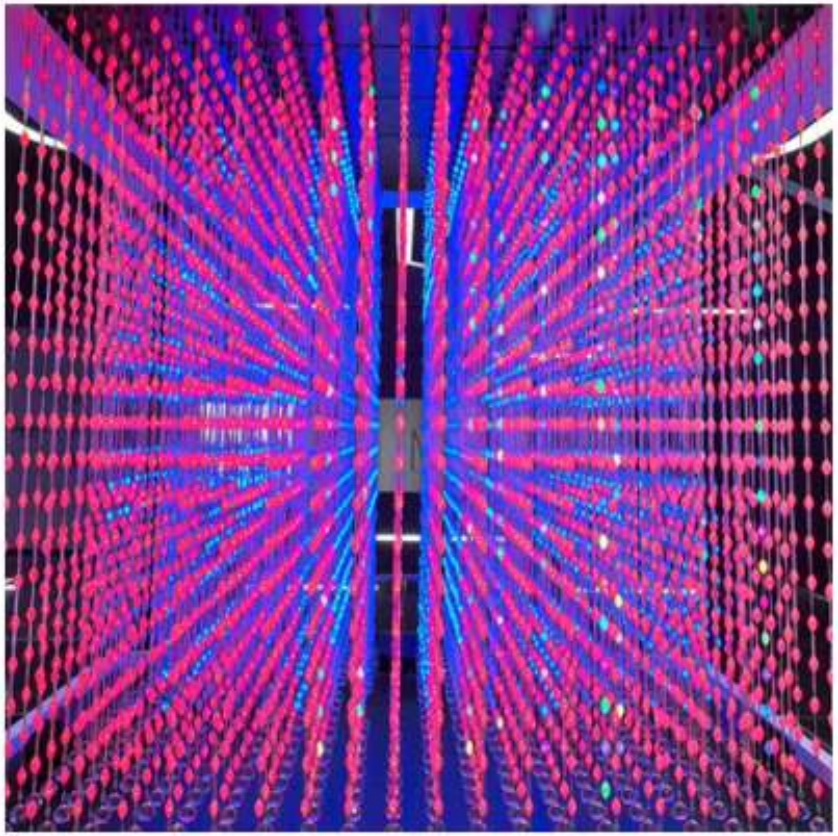

Crystalline structure is a unique environment for strong-field QED effects involving both high-energy charged particles and photons. A small piece of crystal material aligned with the particle beam can be used as an intense source of X- and gamma-ray radiation, a positron source for future e+e- colliders, a beam manipulation instrument in accelerators and colliders, a compact crystalline calorimeter for high-energy physics experiments and gamma-ray space telescopes and a compact ultrahigh gradient plasma wake-field accelerator as well.

The Marie Skłodowska-Curie Actions Global Fellowships, Project TRILLION GA n. 101032975 is dedicated to steering and radiation effects in oriented crystals and their applications implementation into Geant4.

In this seminar various applications of the new Geant4 model of electromagnetic effects in oriented crystals mentioned above will be presented.

19th Feb 2024 3:00 PM

ROOM 412, Building C