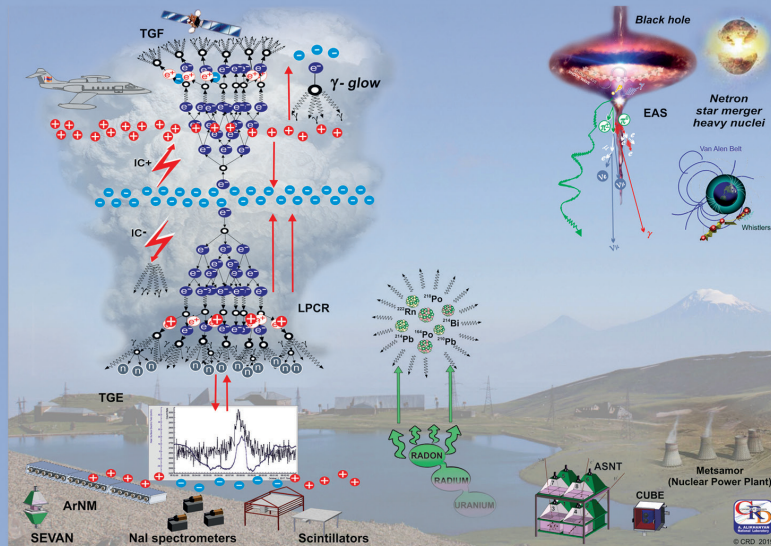


PHYSICS COLLOQUIUM.



Thunderstorms, Lightning and Particle Acceleration

Prof. Ashot Chilingarian
Yerevan Physics Institute | Armenia

6 November 2019 | 14:00
DESY | Zeuthen | Platanenallee 6 | SR 3

At Mt Aragats in Armenia, a variety of detectors measure particle rates at microsec to minute time-scales, energy spectra, electric field data and lightning strikes are recorded around the clock. The particles come from the Sun (solar wind) and from cosmic rays, but recently also intense fluxes of electrons, gamma rays and neutrons have been discovered from thunderstorms. Even Radon rates go up during thunderstorms. Mechanisms of particle acceleration are investigated which lead to Thunderstorm Ground Enhancements (acceleration downwards to Earth) or Terrestrial Gamma Flashes (acceleration upwards, causing Elves and Sprites). Links of atmospheric ionisation and lightning initiation and lightning strikes are discussed.