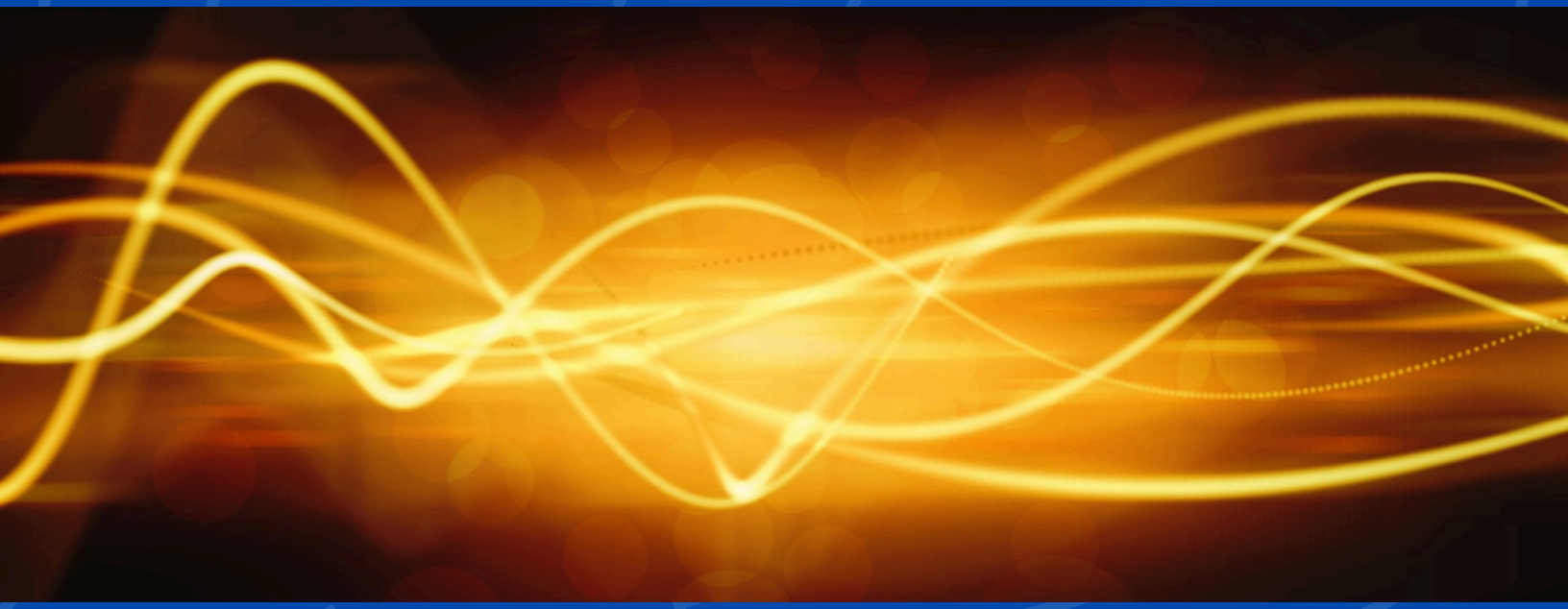
TSI Seminar Series



Unraveling the mysteries of the early universe: next steps in mm-wavelength detection

Abigail Crites | ***Cornell University***

Measuring electromagnetic radiation in the mm- and sub-mm wavelength ranges is scientifically extremely rewarding because it allows us to probe fundamental physics and astrophysics (e.g. neutrino masses, evolution of galaxies) that are not accessible through other high energy physics and astrophysical techniques. However, photon detection in these wavelength ranges present unique challenges that we need to overcome. In this talk I will discuss the scientific challenges (e.g. photons have low energy, atmospheric noise) and the logistical challenges (e.g. there are few commercial applications for mm-wavelengths detectors) that we are tackling. I will give an overview of the history and the state of the art in detector technology and instrumentation and how these innovations will allow us to probe the unique physics accessible in the early universe.

17-Sep-2024 **3:30 PM ET** **Bell Room**