



CERN Colloquium

SPEAKER: Priyamvada Natarajan
TITLE: **Tracing the origin of the first black holes**
DATE: 18 Oct 2018, 16:30
PLACE: 503-1-001 - Council Chamber

ABSTRACT

Black holes appear to be ubiquitous in the universe – most galaxies, if not all, appear to host a supermassive one in their nucleus. The origin of the first, seed black holes, however, remains an open question. Observationally detected bright quasars powered by accreting black holes are found to be in place when the universe was a fraction of its current age and accounting for their existence necessitates rapid growth from a new class of initial seeds. Natarajan will present her work on a new channel to form massive black hole seeds in the early universe – direct collapse black holes – that form in pristine pre-galactic gas disks; the mounting evidence from multi-wavelength data that supports this picture as well as the prospects for testing this model further with data from future space observatories - the James Webb Space Telescope, WFIRST, eROSITA and Euclid mission. About the speaker: Natarajan is a professor at Yale University, with appointments in the Departments of Astronomy and Physics, where she also serves as the Director of the Franke Program in Science and the Humanities currently. She is the Chair of the Division of Astrophysics of the American Physical Society. Her research work has focused on confronting theoretical models and state of the art simulations with observational data in understanding the formation, fueling and feedback from black holes tracking their assembly history over cosmic time and mapping dark matter from gravitational lensing to test the standard paradigm for structure formation. Recipient of many awards and honors for her research including a Title A fellowship at Trinity College, Cambridge; Guggenheim, Radcliffe, Paco Ynudrian and Caroline Herschel fellowships, she also holds the Tycho and Sophie Brahe Visiting Professorship at the Niels Bohr Institute in Copenhagen and an honorary professorship for life at the University of Delhi.

Organised by: W. Lerche/TH-SP..... Tea and coffee will be served at 16h00