

Joint MIPSE/CLaSP seminar



Wednesday
September 18, 2024
3:00pm
Room 1018 Dow

Dr. Christina Cohen

California Institute of Technology

Solar Energetic Particles and Space Weather: Causes and Consequences

Space weather has been identified as a national and international priority which, by some estimates, could cost the US over \$40B a day during an extreme event. Different aspects of space weather affect myriad assets including spacecraft, astronauts, commercial airline flights, power grids, and even oil pipelines. Solar energetic particle (SEP) events are one component of space weather and the desire to predict their occurrence and characteristics is strong. Despite immense progress over the last few decades in understanding the generation of SEPs and increases in the number of spacecraft measuring them, predictions are hampered by what we still do not understand and by limited observations. In this talk, we'll discuss space weather hazards focusing on SEP events – what we know, what we don't know, what we're missing. We'll highlight specific space missions, including Parker Solar Probe and Solar Orbiter, making revolutionary observations closer to the Sun than ever before.

About the Speaker: Christina M. S. Cohen is a research scientist in the Space Radiation Laboratory at the California Institute of Technology. Currently, her work focuses on energetic particles in space, particularly those resulting from solar activity, but she has prior experience studying energetic particles in the Jovian system and the composition of the solar wind. Cohen is involved in the design, building and testing of instruments that have flown and will fly on a number of NASA satellites as well as analysis of the data returned from them. She is a past president of the Space Physics and Aeronomy section of the AGU, an AGU Fellow, Principal Investigator of the Solar Isotope Spectrometer and Cosmic Ray Isotope Spectrometer on Advanced Composition Explorer (ACE), and Deputy Principal Investigator on the Integrated Science Investigation of the Sun on Parker Solar Probe and on the Low Energy Telescope experiment on STEREO. Cohen has received NASA awards for her work on the Ulysses, Wind, Advanced Composition Explorer, and Parker Solar Probe missions.