Institute for Space Weather Sciences Colloquium

Thursday, 31st of October 2024, 1pm ET

via Zoom, meeting ID: 917 2169 7568, password: isws

Maria D. Kazachenko, University of Colorado, Boulder & National Solar Observatory

Solar Magnetic Fields Before and During Eruptions

Space weather is largely caused by the activity of our Sun. Invisible yet powerful magnetic fields, created within the Sun, determine when and where the next solar eruption will happen. In this talk, I will review how advances in solar observations and data-driven models allowed scientists to understand flare magnetism in a lot more detail than ever before. I will overview highlights of statistical analyses of flare magnetism using SDO/HMI datasets and will show examples of recent data-driven MHD models of eruptive X-class flares.

Maria Kazachenko is an assistant professor at the University of Colorado and the National Solar Observatory. She leads the Solar Magnetism research group and uses models and cutting-edge telescopes on the ground and in space to understand how eruptions on the Sun work. Originally from Eastern Europe, she became curious about the Sun after her first total solar eclipse in 1999. She then earned degrees at Montana State University, Bozeman and then joined UC Berkeley as a scientist. She has more than 40 refereed publications and has been honored by prestigious awards including NASA Heliophysics Early Career Award, Robert Bartnik Fellowship in Australia, National Science Foundation CAREER Award and Brinson Award. Prof. Kazachenko has been involved in the development of the Critical Science Plan for the Inouye Solar Telescope, the largest solar telescope in the world, built on Maui in 2022. Her work has been funded by the National Science Foundation, NASA, and private Brinson Foundation.