

## **Analysis of Microwave and Hard X-ray Emissions in Solar Eruptive Events**

Ya-Hui Yang

Solar eruptive phenomena, such as solar flares and coronal mass ejections (CMEs), are generally believed to be associated with the magnetic reconnection in the corona. Theoretically, the free magnetic energy originally stored in the complex magnetic field system can be released by magnetic reconnection and then converted to the plasma kinetic and thermal energies. Since the microwave and hard X-ray (HXR) emissions are the primary emissions in the impulsive phase of a solar flare, investigating their properties and evolution would be helpful for understanding the trigger mechanism. In this project, we particularly focus on the limb eruptive events with clear looptop and footpoint sources via imaging and spectral analyses based on the microwave measurements from Nobeyama Radio Observatory and the RHESSI HXR observations. The flare-CME association will also be discussed. By combining the observational data with the theoretical models, the student in the summer program can learn the physical mechanisms of particle acceleration for different sources in the studied events.