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Introduction: Onset of Solar Flares and Coronal Mass Ejections

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Understanding the energy build up and the trigger mechanism of solarflares and coronal mass ejections (CMEs) is crucially important for theprediction of flare/CME and the space weather. Observations indicatepossible key factors such as magnetic helicity injection and emergingflux. Development of high performance computers has enabled us to carryout direct numerical simulations of flare/CME onset in a realisticthree-dimensional geometry. The goal of this session is to review therecent progresses, integrate the ideas from observation, theory andnumerical simulation, and discuss the future direction of the study of theonset of flares and CMEs. This talk will give a brief introduction ofthe session.