



HAO Colloquium Series

(Refreshments served)

Speaker: Yang Liu, Stanford University

Time: 1:30–2:30 pm

Date: Wednesday, May 1, 2013

Location: CG1-2139, Captain Mary room

Title: Magnetic Helicity in Emerging Solar Active Regions

Abstract:

Using HMI vector magnetic field data, we study magnetic helicity injection into the corona in emerging active regions and examine the hemispheric helicity sign rule. In every region studied photospheric shearing motion contributes most of the helicity accumulated in the corona. A weak hemisphere rule is also found in the newly observed data of 28 emerging active regions observed in the early phase of Solar Cycle 24, which is consistent with previous studies. A relationship between the size and magnetic twist of active regions is inferred in a sample of 22 emerging active regions having a bipolar magnetic field configuration. This relationship is predicted by flux emergence models.