HAO Colloquium Series

Speaker: Ariane Schad, Kiepenheuer Institute for Solar Physics

Time: 3:00–4:00 pm

Date: Wednesday, July 30, 2014

Location: CG1 – 2139 Captain Mary (no webcast or recording will be available)

Title: Measuring the solar meridional flow from perturbations of mode eigenfunctions

Abstract:

The solar meridional flow is an essential element of flux-transport dynamo models, where especially penetration depth and amplitude of the flow are related to the length and strength of the Sun's activity cycle. In recent years, progress was made in measuring the meridional flow in deeper layers of the solar convection zone. In my talk I will present a different, global helioseismic approach, which is based on the perturbation of p mode eigenfunctions, to infer the meridional flow. I will illustrate how eigenfunction perturbations affect observations and discuss the performance of this global method on simulated data. I will show flow measurements obtained from analyses of about 6 years of MDI data. These measurements indicate a deep penetrating meridional flow that shows a complex profile in latitude and depth.