

**Project Title:**

LWS Workshops "Local Helioseismology: Data Analysis, Modeling and Comparisons"

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**Project Information:**

We propose a series of 3 annual workshops in 2010-12 for discussing data analysis techniques and inferences of local helioseismology, helioseismic numerical simulations, their applications for verification and testing of the analysis methods, and comparisons of the techniques and results. Local helioseismology provides tools for imaging structures and mass flows below the solar surface, and becomes increasingly important for understanding the mechanisms of solar activity and developing physics-based forecasts of the solar cycle, emerging active regions and energy release events. However, local helioseismology diagnostics are very challenging, particularly, in regions of strong magnetic fields, because of the complexity of interactions of solar oscillations with the turbulent magnetized plasma of the convection zone and the solar atmosphere. Numerical simulations of solar MHD waves and turbulent dynamics give important insights into the complicated wave and turbulence physics, and also provide artificial data for verification and testing of helioseismology methods and results. Thus, we propose a series of the annual workshops to discuss and stimulate further development of local helioseismology methods, models, and numerical simulations. The workshops will provide a key support to the LWS TR&T helioseismology projects, for the space missions, SDO and Hinode, and ground-based helioseismology networks.

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**Citations:**