

# 国台学术报告 NAOC COLLOQUIUM

2012 年 第 57 次 / Number 57, 2012

**TIME: Wednesday 3:00 PM, Oct 17, 2012**    **LOCATION: A601 NAOC**

## Weak Lensing Peak Statistics

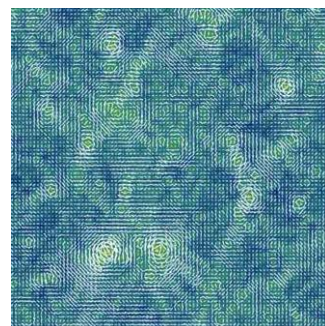
**Dr. Zuhui Fan (Peking University)**



Zuhui Fan received her Ph.D. degree in physics in 1995 from University of Washington. Then she was a visiting scientist at Department of Astronomy and Astrophysics, Univ. of Chicago from 1996 to 2002, and a postdoc fellow at ASIAA and National Taiwan University from Sept. 1999 to Feb. 2000. Since 2002, she has been a professor at Department of Astronomy, Peking University. Her research field is in cosmology and large-scale structure.

### Abstract

Arising from light deflections by large-scale structures in the universe, the weak lensing (WL) effect has become one of the most important cosmological probes. Besides cosmic shear two-point correlation analyses that have been studied extensively, the WL peak statistics are related to nonlinear structures, such as clusters of galaxies, and thus can provide important complementarities in cosmological studies. However, different systematics can affect WL peak statistics significantly. In this talk, I will discuss the effects from intrinsic ellipticities of source galaxies and present a HOD-like theoretical model that can predict the total number of peaks (true+false) in WL convergence maps rather accurately. I will further demonstrate the great potential of using WL peak statistics directly in cosmological studies without the need to differentiate true and false peaks. Ongoing investigations on effects related to realistic observations, such as mask effects and convergence reconstruction methods, will also be discussed.



*All are welcome! Tea, coffee, biscuits will be served at 2:45 P.M.*

You are welcome to nominate speakers to Shude Mao ([shude.mao@gmail.com](mailto:shude.mao@gmail.com)), Licai Deng ([licai@bao.ac.cn](mailto:licai@bao.ac.cn)), Xuelei Chen ([xuelei@cosmology.bao.ac.cn](mailto:xuelei@cosmology.bao.ac.cn)).