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# 国台学术报告 NAOC COLLOQUIUM

Time: **Wednesday 2:30 PM, Sep.02** Location: **A601 NAOC**

## Extremely Light Dark Matter $\psi$ DM

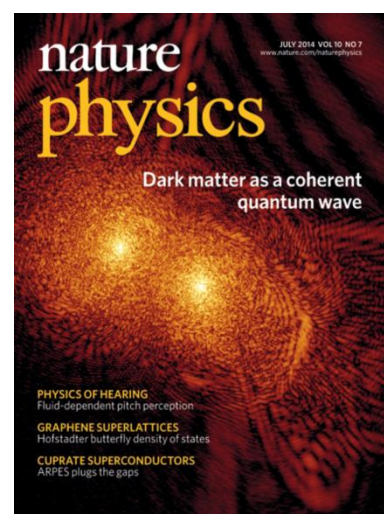
**Prof. Tzihong Chiueh**

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Prof. Tzihong Chiueh obtained his PhD from UT Austin in 1985, then moved to University of Colorado, Boulder as a postdoc researcher. In 1989, He joined National Central University in Taiwan initially as the associate professor, then professor in 1992. Since 1998, he moved to National Taiwan University as the professor. His research interests include the dynamics of galaxy and galaxy clusters, gas dynamics of molecular cloud with the help from large-scale simulation. He is also involved in building a microwave interferometer telescope located in Hawaii, USA.

**Abstract** It has long been known that local dwarf galaxies exhibit dark matter cores of 1 kpc size, in variance of the CDM prediction, and it calls for alternative dark matter models. While WDM suffers from various problems, we show that a bosonic dark matter of particle mass  $10^{-22}$  eV ( $\psi$ DM) can avoid the problems facing WDM. Halos of  $\psi$ DM contain stable soliton cores, which has a size and a mass scaled as the inverse  $1/3$  power and  $1/3$  power of halo mass. For a halo of  $10^{12}$  solar mass, the soliton size and mass are 150pc and  $10^9$  solar mass respectively. This new feature has a potential to help super-massive black hole formation.  $\psi$ DM also has other predicted features that are testable by observations, and will be presented in this talk.



*All are welcome! Tea, coffee, biscuits will be served at 2:15 PM.*