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INPP Seminar | Carbon Burning in Stars, March 5

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Categories: Events
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The Institute of Nuclear and Particle Physics (INPP) presents Wanpeng Tan, of University of Notre Dame, on "Carbon Burning in Stars", on Tuesday, March 5, at 4 p.m. in Edwards Accelerator Lab, Roger W. Finlay Conference Room.
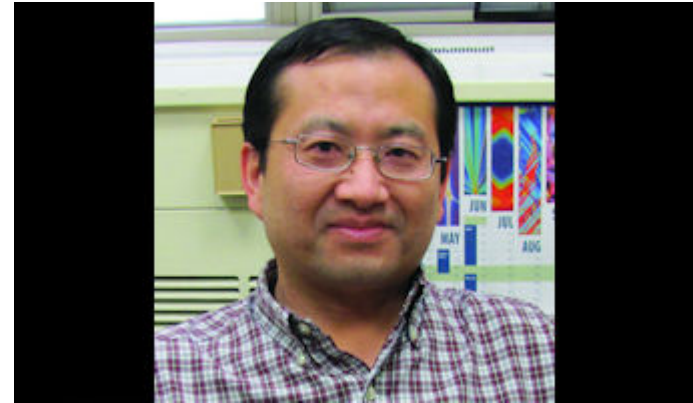
Wanpeng Tan

Abstract: Carbon and oxygen burning reactions, such as $12C+12C$, $12C+16O$, and $16O+16O$ are important for late stellar burning phases. The strength of these fusion reactions also determine the ignition, burning, and nucleosynthesis pattern in cataclysmic binary systems such as type Ia supernovae and x-ray super bursts. Various experimental work and developments related to measurement of these reaction rates have been carried out at University of Notre Dame. In particular, $12C+12C$ and $12C+16O$ fusion experiments with SAND (a silicon detector array) have been conducted using the high-intensity St. ANA accelerator and particle-gamma coincidence technique. New results on their cross sections at low energies relevant to nuclear astrophysics will be reported. Its impact on the carbon burning process under astrophysical scenarios will be discussed as well.