Temple University Mathematics Colloquium

Xiaofeng Yang

University of North Carolina

will speak on

Modeling, simulation and analysis of complex fluids

ABSTRACT: We study the motion of the multiphase flows, in which governing equations are derived by an energetic phase-field approach. Efficient and accurate numerical schemes including projection-type methods, stabilized semi-implicit methods, and adaptive moving mesh methods, are developed to solve those numerically challenges. Rigorous stability and error analysis are established and fast numerical algorithms are implemented to simulate various multiphase flow phenomena. In addition, an efficient and stable numerial algorithm is proposed to simulate the flows of the liquid crystal polymers. Several numerical benchmarks are obtained.

Monday, 2 February 2009
Lecture at 4:00 pm
Coffee, tea, and refreshments from 3-5 pm
Room 617, Wachman Building
Department of Mathematics