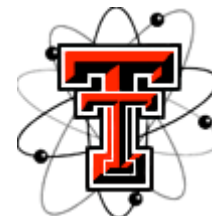




Physics Colloquium



Thursday, Oct 6th at 3:30 pm in SC 234

Dr. Gregory A. Parker
University of Oklahoma

Quantum Time-Dependent and Time-Independent Three-Body Rearrangement Collisions in Hyperspherical Coordinates

We present both time-independent and time-dependent methods for accurately and efficiently solving the quantum Schrodinger equation using hyperspherical coordinates. A new time-dependent wave packet method is presented and compared to our time-independent method for extracting state-to-state S-matrix elements. This new method expresses the wave packet in a democratic set of (APH) coordinates during the evolution in time. Product channel eigenfunctions are projected onto the propagated wave packet along a fixed asymptotic hyperradius at each time step. The S matrix elements are proportional to the Fourier transform of the projection coefficients.

Refreshments at 3:00 pm in SC 103