Contribution ID: **9** Type: **Contributed talk**

Structure and dynamics from the time-dependent Hartree-Fock model

Thursday, 25 March 2010 11:30 (30 minutes)

Within the framework of self-consistent mean-field models employing effective interactions a wide range of structure phenomena can be described, encompassing bulk properties such as masses and radii as well spectroscopy. In the absence of restrictions, such as spherical symmetry or time-reversal invariance within these models, there are additional contributions to the spin-current tensor and time-odd densities and in the mean-field that have a direct impact on deformation properties in nuclei as well as collisions between them.

Recent results from Skyrme Hartree-Fock and time-dependent Hartree-Fock calculations will be discussed, including the effects from the time-odd terms in the mean-field and the role of tensor forces in the reproduction of structure data and collisions between nuclei. These terms are shown to have non-negligible effects for describing collisions, in particular fusion.

Primary author: Ms SUCKLING, Emma (University of Surrey)

Co-authors: Dr STEVENSON, Paul (University of Surrey); Dr FRACASSO, Sara (University of Surrey)

Presenter: Ms SUCKLING, Emma (University of Surrey)

Session Classification: Nuclear Reactions and Astrophysics

Track Classification: Nuclear Reactions and Astrophysics