Contribution ID: **19** Type: **Contributed talk**

A complete kinematics approach to study multi-particle final state reactions

Thursday, 25 March 2010 09:30 (30 minutes)

Many-particle final state reactions can provide information on the structure of excited nuclear states and their decay mechanism. Progress in detector technology is making it possible to measure such many-particle final states in complete kinematics thereby opening up new possibilities for data analysis. Reaction channels indistinguishable to the incomplete measurement can be separated allowing for new interesting physics cases to be studied.
As an example, I will demonstrate how information on the structure and decay mechanism of excited states of C12 can be extracted from complete kinematics data on the reactions B10(He3,paaa) and B11(He3,daaa). Notably, we have been able to identify new gamma transitions between unbound states in C12 through use of the missing-energy method.
Similar studies with radioactive beams have, so far, been impractical mainly because of insufficient beam intensites, but should become possible at the new RIB facilities.

Primary author: Mr KIRSEBOM, Oliver S. (Department of Physics and Astronomy, Aarhus University, Denmark)

Co-authors: JONSON, Björn (Chalmers University of Technology, Sweden); NYMAN, Göran (Chalmers University of Technology, Sweden); FYNBO, Hans O. U. (Aarhus University, Denmark); RIISAGER, Karsten (Aarhus University, Denmark); BORGE, Maria J. B. (Instituto de Estructura de la Materia, CSIC, Spain); ALCORTA, Martin (Instituto de Estructura de la Materia, CSIC, Spain); TENGBLAD, Olof (Instituto de Estructura de la Materia, CSIC, Spain); NILSSON, Thomas (Chalmers University of Technology, Sweden)

Presenter: Mr KIRSEBOM, Oliver S. (Department of Physics and Astronomy, Aarhus University, Denmark)

Session Classification: Nuclear Reactions and Astrophysics

Track Classification: Nuclear Structure and Reactions