

Exit Report  
FUSTIPEN collaboration visit  
GANIL, March 19 – April 11, 2012  
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I spent three weeks in GANIL from 19 of March to April 9 hosted by Marek Płoszajczak. With Marek, Jimmy Rotureau and Bruce Barrett we had fruitful discussions on how to implement the Berggren's ensemble in an ab-initio No-Core Shell model framework. While in GANIL we carried out our first calculations on  $^3\text{H}$  and  $^4\text{He}$  which were very encouraging. We also set up a plan for future calculations, involving  $^5\text{He}$  and  $^6\text{He}$ . With Jimmy Rotureau we worked on important technical aspects of the algorithm and in particular we generalized the code for carrying out calculations in extended model spaces. On March 20-21 I attended a workshop on "Understanding light nuclei microscopically" where I delivered a presentation on research related to my PhD thesis and recent ab-initio Gamow Shell Model results. The meeting was very successful and generated many interactions amongst the participants.

On 9 of April I left GANIL and went to Paris to participate in a inter-collaboration meeting, where I also gave a talk focusing on the scientific goals that were achieved in my stay in GANIL. The workshop was organized by Thomas Duguet and took place in Saclay-Paris from April 10 to April 11. During this workshop I had the chance to discuss with Witek Nazarewicz some physics projects which are related to the nature of my PhD and also discuss the progress of the on-going ab-initio Gamow Shell Model.

My first visit in France with FUSTIPEN was very successful and the goals of initiating the collaboration were met. First results on our ab-initio studies were completed during my stay in GANIL and our strategy for future calculations was planned.