

Report of FUSTIPEN visit to GANIL and Saclay

by

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January 17 to 22, 2011

On January 17, 2011, I took the train from Paris to Caen in order to take part in the FUSTIPEN Inauguration and Workshop at GANIL on January 18 and 19. On Tuesday afternoon January 18, I presented one of the plenary talks at the FUSTIPEN Inauguration on the topic of “Towards a Microscopic Theory for Nuclear Structure.” I felt that the FUSTIPEN Inauguration on January 18 was highly successful in setting the right tone for the future of this collaborative research program between French and US nuclear physicists.

The workshop on Wednesday, January 19, contained many talks covering current research on nuclear structure, especially regarding exotic nuclei. I found the two-day meeting to be very informative. It definitely served the goal of promoting networking among French and US nuclear physicists regarding future collaborations. In particular, I discussed with Marek Ploszajczak from GANIL the application of the Gamow Shell Model to the No Core Shell Model, for treating states in the continuum. We agreed on a research plan and have started a collaboration on this topic, which includes Jimmy Rotureau, a former PhD student of Marek Ploszajczak, who is currently a post-doctoral research associate working with me at the University of Arizona. Dr. Rotureau was also at the FUSTIPEN Inauguration and Workshop and presented a talk at the workshop on his work on the Gamow Shell Model.

On January 20 and 21, 2011, as part of my FUSTIPEN visit to French, I went to the Center for Theoretical Research at CEA Saclay, about 45 minutes by train southwest of Paris, to continue my collaborative research with my long-time colleague, Dr. Bertrand Giraud. For the last five or six years we have been working on a first-principles approach to Density Functional Theory for atomic nuclei. Most recently we have been investigating the spin density matrix and its application to atomic nuclei, particularly regarding parity violation in nuclei. During my two days at Saclay, we finished some final details concerning this project and then submitted it for publication on January 21. Support from FUSTIPEN was acknowledged in our manuscript. On Saturday, January 22, 2011, I returned to the USA and the University of Arizona in Tucson.

Submitted by Bruce Barrett

March 14, 2011