2015 European Nuclear Physics Conference
European Physical Society · university of groningen · kvi - center for advanced radiation technology
Groningen · 31 August - 4 September 2015 · www.EuNCP2015.org

Contribution ID: **130** Type: **Oral**

Dissipative effects in fission investigated with spallation reactions of 208Pb

Thursday, 3 September 2015 15:00 (15 minutes)

In fission, the investigation of different experimental observables has shown evidences that the viscosity of the medium changes with the deformation, but also with the nuclear temperature [1]. However, these ideas are still under debate because there conclusions could be biased by the experimental conditions. We propose then to investigate these effects with complete kinematic measurements of the fission products at high excitation energy, low angular momentum and small compound nucleus deformation, where dissipative effects should manifest in a clear way. We will report recent results obtained at GSI for the reaction 208Pb+p at 500AMeV. This reaction fulfills the optimum conditions for the investigation of dissipative effects in fission. Moreover, the new SOFIA setup [2] allowed us to construct observables providing information on the fissioning nucleus, and its saddle and scission configurations. In particular, the unambiguous identification in mass and atomic number of both fission fragments, obtained for the first time in this experiment, was a key achievement. The fission cross sections and the charge distribution of the fission fragments were used to study the presaddle dynamics at small deformation [3,4]. In this work, we will present the results concerning the mass distribution of the fission fragments, which should help us to investigate the postsaddle dynamics.

[1] D. Jacquet et al., Prog. Part. Nucl. Phys. 63,155 (2009).
[2] G. Boutoux et al., Phys. Procedia 47,166 (2013).
[3] J.L. Rodríguez-Sánchez et al.,Phys. Rev. C 90, 064606 (2014).
[4] Y. Ayyad et al., Phys. Rev. C 91, 034601 (2005).

Primary author: RODRIGUEZ SANCHEZ, Jose Luis (University of Santiago de Compostela)

Presenter: RODRIGUEZ SANCHEZ, Jose Luis (University of Santiago de Compostela)

Session Classification: Nuclear Physics Applications III, Accelerators and Instrumentation III