

Internship in nuclear computing

OO-PYTHON/C++ implementation of the ELIE model for ion-ion collisions

The ELIE model was developed some years ago to provide a statistical description of heavy ion collisions in the energy domain covered by experiments at GANIL with large energy deposit in the target nucleus, leading to large final-state phase space where many reaction channels are open, whose relative widths are essentially dependent on their statistical weights, as for example proposed in the Fermi breakup model.

The ELIE model is so far programmed in PYTHON. In order to perform detailed comparison with data and other reaction models, a version of ELIE is needed, which can compute large sets of events in a limited amount of time on small computers. Either object oriented PYTHON, which can be compiled and not only interpreted as it is presently the case, or C++, will be the ground for this new version of ELIE which will be programmed during this several-month internship. Improvements for ELIE will also be provided, to widen the field of potential applications of this model.

Required skills:

Nuclear and particle physics, object-oriented PYTHON/C++ programming

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