Tuesday
Apr. 10th
At 3:45pm

Trojan House Measurements with RIBs: The Case of the 18F(p,alpha)150 Reaction and Its Astrophysical Relevance

Abstract:

Crucial information on novae nucleosynthesis is linked to the abundance of 18F, which, due to great improvements in gamma-ray astronomy, can be detected in explosive environments. Therefore, the reaction network producing and destroying this radioactive isotope has been extensively studied in the last years. Among those reactions, the 18F(p,alpha)15O cross section has been measured by means of several dedicated experiments, both using direct and indirect methods. The presence of resonances in the energy region of astrophysical interest has been reported by many authors. In the present work a report on a recent experiment performed via the Trojan Horse Method (THM) is presented and the results are given and compared with the ones known in the literature, both direct and indirect. Data arising from THM measurements are then averaged and the reaction rate calculated in the novae energy range. The results are then applied to the relevant astrophysical cases.

TEXAS A&M UNIVERSITY

CYCLOTRON COLLOQUIUM

Dr. R. Gianluca Pizzone

Researcher

Laboratori Nazionali del Sud

Istituto Nazionale di Fisica Nucleare

CYLOTRON INSTITUTE

Room 228

Refreshments will be served at 3:30pm