
Neutron induced reactions and Trojan Horse Method

Marisa Gulino*^{1,2}

¹Laboratori Nazionali del Sud (LNS) – Via Santa Sofia 62 95123 Catania, Italy

²University of Enna KORE (UniKORE) – cittadella Universitaria Enna Bassa (En), Italy

Abstract

Indirect methods in studying nuclear reactions of astrophysical interest received much attention over the last two decades. Among them, the Trojan Horse Method has been applied to study a number of reactions induced by charged particles relevant for Nuclear Astrophysics. The method allows to measure the reaction cross-section directly in the energy region of astrophysical interest avoiding the suppression effects due to the Coulomb and centrifugal barrier and the electron screening effect.

Quasi-free reactions can also be exploited to study processes induced by neutrons. This technique is particularly interesting when applied to reaction involving unstable short-lived nuclei. Such processes are very important in the nucleosynthesis of elements in the s- and r-processes scenarios and this technique can give hints for solving key questions in Nuclear Astrophysics, where direct measurements are practically non feasible.

Recent experimental results on neutron induced reactions studied by THM will be presented.

*Speaker