

EXCITATION FUNCTIONS OF EVAPORATION RESIDUES FOR THE SYSTEM
 $^{46}\text{Ti} + ^{12}\text{C}$ IN THE RANGE 21-57 MeV(LAB)

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We generally study the de-excitation of a compound nucleus in the mass region $A \sim 50-60$ obtained by the $^{12,13}\text{C}$ on $^{46-50}\text{Ti}$ and ^{28}Si on $^{28-30}\text{Si}$. In this paper we present some results concerning the reaction $^{46}\text{Ti} + ^{12}\text{C}$. We used in-beam γ ray spectroscopy method ; a code SEARC¹⁾ was written for a semiautomatic reduction data. By these techniques a large variety of product nuclei can be studied simultaneously.

The experiments were performed with the ^{12}C beam from the Saclay tandem at bombarding energy 21-57 MeV (lab) by 3 MeV steps. De-excitation γ rays were obtained at 90° and 55° with respect to the beam direction with two Ge(Li) detectors ($\sim 15\%$ efficiency).

The results were compared to the new version of the code CASCADE²⁾ with standard parameters obtained from literature. The thirteen experimental excitation functions were compared to the statistical theory predictions. An overall agreement was obtained, fig. 1 shows some results. The ability to fit a number of excitation functions with a single set of statistical parameters provides a crucial test of the validity of these parameters.

1) Code SEARC : S. Cavallaro and L. Sperduto, M. Romeo to be published.

2) Code CASCADE : F. Pühlhofer, Nucl. Phys. A280 (1977) 267.

