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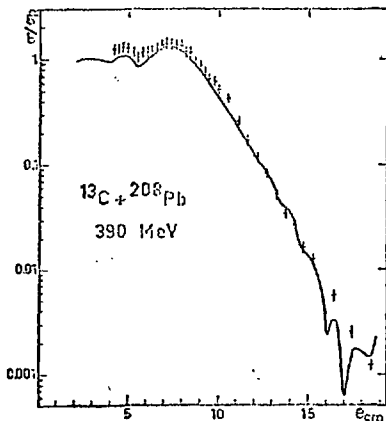
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Physique des Particules.

ELASTIC SCATTERING OF ^{13}C IONS ON ^{208}Pb AT 30 MeV/N.

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Elastic scattering data have been collected at 30 MeV/N at SARA (JSS - Grenoble). This report is concerned with ^{13}C -ions on a ^{208}Pb target. The angular distributions has been measured between 4 and 18 degrees, using the spectrometer. Angular resolution and accuracy were 6.2 and 0.05 degree respectively. Energy resolution amounted to 1.7 MeV. Data are shown on the



figure, as well as the results of a fit with optical model calculations, performed with the code SFI using 500 partial waves. Several sets of parameters can yield satisfactory fits, e.g. $V = 50$ MeV, $r = 1.17$ fm, $a = 0.551$ fm, $w = 25.7$ MeV, $r' = 1.157$ fm and $a' = 0.0558$ fm, with $X^2/N = 1.6$. It can be seen on the figure that the quality of the fit markedly improves if one renormalizes the data by 0.91. The strong absorption radius derived from the calculations, i.e. for $T_0^2 = 1/2$, was found to be $R_{1/2} = 11.0$ fm, which corresponds to $r_{1/2} = 1.33$ fm (1.32 fm with the quarter point recipe). This value is intermediate between 1.5 fm usually found at low energies and 1.15 fm at 85 MeV/N¹⁾. The predicted reaction cross section corresponding to the above o.m. parameters is 3170 mb. In the Bethe-Remberg formula for

the reaction cross section, the transparency parameter would take the value of 30 %.

1) M. Buenerd et al., Phys. Lett. 102E (1981) 242.