



## Elastic scattering and neutron transfer in neutron rich light nuclei

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Neutron rich exotic beams ( $6\text{He}$ ,  $8,9\text{Li}$ ,  $10,11\text{Be}$ ,  $13\text{B}$ ,  $16,17\text{C}$ ), produced through the in-flight fragmentation of  $18\text{O}$  beams at  $55\text{ A}\cdot\text{MeV}$ , are available at LNS [1]. Using the CHIMERA detector [2,3], we have begun a campaign to study transfer reactions with proton- and deuteron-rich targets. The kinematical coincidence method was used to extract high resolution angular distributions of binary reactions from the measured light particle energy spectra [4]. A reproduction of the data of the  $10\text{Be}+p, d+9\text{Be}+d, t$  reactions was obtained using CRC calculations and the results compared with a recent analysis of lower energy data [5]. Complementary information from the  $\gamma$ -ray detected in the CsI stage of the CHIMERA detectors was also used to disentangle the ground state from excited levels in the final stage of the reaction. Perspectives on future measurements with the use of the new FARCOS array [6] and on upgrading the intensity of the fragmentation beam will also be given.

### References:

[1] see <http://fribs.lns.infn.it/upgrade-results.html>

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