

## **Phenomenological critical interaction distance from exotic nuclei elastic scattering measurements.**

Abstract: Elastic scattering, as a surface process, is very suitable to investigate the peculiar surface properties of the weakly bound exotic nuclei. Analysis of elastic scattering angular distributions can provide valuable information on the static and dynamics effects of exotic nuclei. Although some progress has been achieved in microscopic reaction theory, the phenomenological approach, where the projectile interacts with the nucleus as a whole and the interaction between the colliding nuclei is represented by an appropriate potentials, is still a very reliable and practical procedure to analyze these angular distributions. Distances and radius play important role in this phenomenological analyses. To contribute to this we have performed a survey of elastic scattering measurements involving tightly, weakly bound and exotic projectile on heavy and medium mass targets, at energies close to the Coulomb barrier, and analyzed them in terms of the interaction distance. Our goal is to provide a phenomenological investigation of the influence of static and dynamic effects of the exotic properties of some of light nuclei, as  ${}^6\text{He}$ ,  ${}^8\text{B}$  and  ${}^{11}\text{Li}$ , in the elastic scattering measurements.

***Valdir Guimaraes (IF-USP)***