



Nuclear Reaction Studies at the Open Laboratory for Nuclear Physics (LAFN)

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The Open Laboratory of Nuclear Physics (LAFN, acronym in Portuguese) is the only accelerator laboratory in Brazil with research in basic and applied nuclear physics, and one of two in South America. It has an 8 MV Pelletron tandem accelerator with stable beams between protons and Ag, and also produces light ($6 \leq A \leq 20$), radioactive ion beams (RIB) with the Radioactive Ion Beams in Brasil (RIBRAS) system [1].

Our main interest is the reaction mechanism with cluster - structured, weakly-bound projectiles, the effect of breakup and transfer reactions on the elastic and other reaction channels. This subject is studied with radioactive beams of ${}^6\text{He}$, ${}^7\text{Be}$, ${}^8\text{Li}$, ${}^8\text{B}$, ${}^{10}\text{Be}$, ${}^{12}\text{B}$, and with cluster-structured, stable, weakly-bound beams as ${}^6,7\text{Li}$, ${}^9\text{Be}$, and ${}^{10}\text{B}$.

LAFN is being refurbished with new detector systems (charged particle telescope arrays with pixelated Delta E detectors, Lyso - SiPm array for γ -ray detection), and new digital electronics/data acquisition. I will present some of our recent results and our plans for the future.

References

- [1] A. Lépine-Szily, R. Lichtenthäler, V. Guimaraes Eur. Phys. J. A (2014) 50:128