

## Searching for a polarization potential in the breakup of $^8\text{B}$ \*

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In this work we tested some prescriptions for the polarization potential for the breakup of  $^8\text{B}$  on  $^{58}\text{Ni}$  at near barrier energies. We have shown that the procedures of obtaining mean  $l$ -independent local polarization potentials, commonly used to study the elastic scattering of weakly bound nuclei, are not able to describe on the same footing the elastic and breakup angular distribution, due to the crucial role played by the non-local interactions as corroborated by our dispersion relation calculations. A polarization potential obtained from the CDCC couplings, with an adjusted strength, can simulate the nuclear breakup effects but cannot describe the Coulomb coupling effects present at smaller angles. The inclusion of the  $l$ -dependence on the polarization potential was not enough to improve the agreement with the breakup angular distributions. Our results indicate that continuum couplings are extremely non-local and the complexity of coupled channel methods may well be unavoidable.

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