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Microscopic Calculations of the Nucleus-Nucleus Optical Potential

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Abstract: In present work, a density dependent nucleon-nucleon interactions based on the G-matrix elements of the Paris nucleon-nucleon potential have been used to calculate the real part of the nucleus-nucleus optical potential. We have compared our results with those deduced from experiment. We found that our results, obtained using a suitable approximation of the kinetic energy density, agree satisfactory with those extracted from experiment at the strong absorption radius. Moreover, the higher values of the compressibility, K , agree better with experiment than the lower values.



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