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The study of some nuclear properties
of even-even 114-120Cd isotopes
using interacting boson model (IBM-1)

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Abstract:

In this study, we have determined the most appropriate Hamiltonian for the study of even-even Cd (114-120) to calculate, its energy levels using the interacting boson model (IBM-1). In addition, the backbending (moment of inertia as a function of $(\hbar\omega)$) of the energy levels for each isotope was indicated through the experimental and calculated values of the energy levels. A simulation program with MATLAB-18 has been built for this purpose, the results were compared with previous experimental data and it was observed that they were on a good agreement.