On Spectrum of Quantum Dot with Impurity in Lobachevsky Plane

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A model of the quantum dot with impurity in Lobachevsky plane is considered. With explicit formulae for the Green function and the Krein $Q-$function in hand, a numerical analysis of the spectrum is done. The analysis turns out to be more complicated than one might expect at first glance since spheroidal functions with general characteristic exponent are involved. The curvature effect on the eigenvalues and the eigenfunctions is investigated.