



Mathematical Physics

Supersymmetric Quantum Mechanics with Reflections

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We consider a realization of supersymmetric quantum mechanics where supercharges are differential-difference operators with reflections. A supersymmetric system with an extended Scarf I potential is presented and analyzed. Its eigenfunctions are given in terms of little -1 Jacobi polynomials which obey an eigenvalue equation of Dunkl type and arise as a $q \rightarrow -1$ limit of the little q -Jacobi polynomials. Intertwining operators connecting the wave functions of extended Scarf I potentials with different parameters are presented.

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