

High Energy Physics - Theory

On the Supersymmetric Spectra of two Planar Integrable Quantum Systems

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Two planar supersymmetric quantum mechanical systems built around the quantum integrable Kepler/Coulomb and Euler/Coulomb problems are analyzed in depth. The supersymmetric spectra of both systems are unveiled, profiting from symmetry operators not related to invariance with respect to rotations. It is shown analytically how the first problem arises at the limit of zero distance between the centers of the second problem. It appears that the supersymmetric modified Euler/Coulomb problem is a quasi-isospectral deformation of the supersymmetric Kepler/Coulomb problem.

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