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Exactly Solvable Anharmonic Potentials with Variable Bumps and Depths

A new approach based on Darboux Transformations is introduced to generate new classes of solvable anharmonic potentials with a variable number of bumps and depths. By introducing the concept of a transformation key, we present a method of controlling the number of bumps and their depths in these potentials. Although this method was applied to the one-dimensional generalized harmonic oscillator potential, it can be easily adapted to generate exactly-solvable potentials using other known quantum potentials.