

# Spectral Theory and Applications

## **New spectral estimations for a class of integral-difference operators and generalisation to higher dimensions**

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Quadratic form approach allows for new results in the analysis of a class of integral-difference operators in finite domains: non-negativity, spectral estimations, a new property of Legendre polynomials; and establishing links with weighted mean-square deviation functionals and with infinite Jacobi matrices with not-bounded coefficients. Generalisation of integral-difference operators to higher dimensions is provided and application to matter relaxation in a field is considered. A new class of special functions naturally appears.

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