

Factorization Method and Second Order Linear Difference Equations

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ABSTRACT

This talk addresses an investigation on a factorization method for difference equations. It is proved that some classes of second order linear difference operators, acting in Hilbert spaces, can be factorized using a pair of mutually adjoint first order difference operators. We show how to integrate certain classes of second order difference equations. These classes encompass equations of hypergeometric type describing classical orthogonal polynomials of a discrete variable.