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The Discrete Analog of the Malgrange-Ehrenpreis Theorem

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(Submitted on 21 Jul 2011)

One of the landmarks of the modern theory of partial differential equations is the Malgrange- Ehrenpreis theorem that states that every non-zero linear partial differential operator with constant coefficients has a Green function (alias fundamental solution). In this short note I state the discrete analog, and give two proofs. The first one is Ehrenpreis- style, using duality, and the second one is constructive, using formal Laurent series.
This article is accompanied by the Maple package LEON available from: this http URL .

Comments:	4 pages. Articles written in fond memory of Leon Ehrenpreis (1930-2010)
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