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Maxim Derevyagin* (maksym.derevyagin@uconn.edu), CT. *Two-parameter eigenvalue problems for Jacobi matrices.*

A number of questions in analysis and probability leads to an eigenvalue problem of the form

$$(J + sH - xI)y = 0,$$

where J , H are Jacobi matrices, s and x are spectral parameters (one of which is usually fixed), and y is a vector to be found. Clearly, the elements of y should be polynomials in x and, at the same time, they should be rational functions in s .

At first, we will discuss the questions that induce such eigenvalue problems and then a few concrete examples of J and H will be considered. Also, a basic ideology of Darboux transformations for the eigenvalue problems in question will be presented. (Received September 16, 2018)