

1103-65-12

Mihaela Cristina Drignei* (mdrignei@pitt.edu), University of Pittsburgh at Bradford,
Bradford, PA 16701. *A numerical solution to an inverse Sturm-Liouville problem by two spectra.*

We propose a numerical method for reconstructing the coefficient function in the canonical Sturm-Liouville differential equation from two known sequences of eigenvalues. We focus on the case of the two sequences being the Dirichlet and the Dirichlet-Robin eigenvalue-sequences. Our method is Newton-type. We shall describe the method and illustrate it with examples. We shall also compare it with two existing methods in literature: a quasi-Newton method, and a variational method. (Received August 13, 2014)