A Necessary Aspect of the Generalized Beals Condition for the Riesz Basis Property of Indefinite Sturm-Liouville Problems

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For the Sturm-Liouville eigenvalue problem $-f'' = \lambda r f$ on $[-1,1]$ with Dirichlet boundary conditions and with an indefinite weight function r changing it's sign at 0 we discuss the question whether the eigenfunctions form a Riesz basis of the Hilbert space $L^2_{|r|}[-1,1]$. In the nineties the sufficient so called generalized one hand Beals condition was found for this Riesz basis property. Now using a new criterion of Parfyonov we show that already the old approach gives rise to a necessary and sufficient condition for the Riesz basis property under certain additional assumptions.