

This is a review text file submitted electronically to MR.

Reviewer: Znojil, Miloslav

Reviewer number:

Address:

NPI ASCR, 250 68 Rez,
Czech Republic
znojil@ujf.cas.cz

Author: Cheon, Taksu; Exner, Pavel; Turek, Ondrej

Short title: Tripartite connection condition for a quantum graph vertex.

MR Number: 2737903

Primary classification: 81Q35

Secondary classification(s): 81U99

Review text:

The design of the low- and high-pass filters is a characteristic example of the relevance of quantum graphs in applications. This motivated the present study in which the new form of boundary conditions at a vertex is introduced and advocated. Mathematically, it is a reduced form of the general boundary condition. By its construction it proves most effective when the number of independent parameters is to be identified for two connection matrices of given (and equally weighted) ranks. Its merits are fine-tuned to the calculations of the scattering off the vertex when both the connection matrices are singular and when the dynamics at both the large and small momenta is interesting.