

# Abstract graph-like space and vector-valued metric graphs

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In this note we present some abstract ideas how one can construct spaces from building blocks according to a graph. The coupling is expressed via boundary pairs, and can be applied to very different spaces such as discrete graphs, quantum graphs or graph-like manifolds. We show a spectral analysis of graph-like spaces, and consider as a special case vector-valued quantum graphs. Moreover, we provide a prototype of a convergence theorem for shrinking graph-like spaces with Dirichlet boundary conditions.

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