

**Nizhnik, L. P.**

**Spectral analysis of metric graphs with infinite rays.** (English) Zbl 1324.05118  
Methods Funct. Anal. Topol. 20, No. 4, 391-396 (2014).

The author gives a detailed analysis of spectral properties of infinite graphs consisting of a finite metric graph and a semi-infinite chain (a ray) attached to each vertex. It is shown that the adjacency matrix of such a graph defines a selfadjoint operator unitarily equivalent to a direct sum of a finite number of explicitly written Jacobi matrices. For several examples, spectra and eigenvectors are calculated.

Reviewer: [Anatoly N. Kochubei \(Kyiv\)](#)

**MSC:**

[05C50](#) Graphs and linear algebra (matrices, eigenvalues, etc.)  
[05C63](#) Infinite graphs  
[47B36](#) Jacobi (tridiagonal) operators (matrices) and generalizations

Cited in **3** Documents

**Keywords:**

[metric graph](#); [adjacency matrix](#); [Jacoby matrix](#)