Kotlov, Andreǐ
Spectral characterization of tree-width-two graphs. (English) Zbl 0980.05043
Combinatorica 20, No. 1, 147-152 (2000).

Summary: Y. Colin de Verdiere [J. Comb. Theory, Ser B 74, 121-146 (1998; Zbl 1027.05064)] introduced a new spectral invariant (denoted here by $\ell(G)$) of a graph $G$, similar in spirit to his (now classical) invariant $\mu(G)$. He showed that $\ell(G)$ is minor-monotone and is related to tree-width $la(G)$ of $G$: $\ell(G) \leq la(G)$ and, moreover, $\ell(G) \leq 1$ iff $la(G) = 1$, i.e. $G$ is a forest. We show that $\ell(G) = 2$ iff $la(G) = 2$ and give the corresponding forbidden-minor and ear-decomposition characterizations.

MSC:
05C75 Structural characterization of families of graphs

Keywords:
tree-width-two graphs

Full Text: DOI