The Lambda-Tau Inverse Eigenvalue Problem

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Let $\lambda_1 < \cdots < \lambda_n$, $\tau_1 < \cdots < \tau_{n-2}$ be $2n - 2$ real numbers that satisfy strict second order Cauchy interlacing inequalities $\lambda_i < \tau_i < \lambda_{i+2}$ and nondegeneracy conditions $\lambda_{i+1} \neq \tau_i$. Given a connected graph $G$ on $n$ vertices where vertices 1, 2 are adjacent, it is proven that there is a real symmetric matrix $A$ with eigenvalues $\lambda_1, \ldots, \lambda_n$, and eigenvalues of $A(\{1, 2\})$ being $\tau_1, \ldots, \tau_{n-2}$, such that graph of $A$ is $G$, provided some necessary combinatorial conditions on $G$ are satisfied.