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Sergei Avdonin* (s.avdonin@alaska.edu), Department of Mathematics and Statistics,
University of Alaska Fairbanks, Fairbanks, AK 99709. *Control and Inverse Problems for Partial
Differential Equations on Graphs.*

We consider control and inverse problems on graphs for several types of PDEs including wave, heat and viscoelasticity equations. We demonstrate that, for graphs without cycles, unknown coefficients of the equations and right-hand sides together with the topology of the graph and lengths of the edges can be recovered from the dynamical Dirichlet-to-Neumann map associated with the boundary vertices. For general graphs with cycles additional observations at the internal vertices are needed for stable identification. The corresponding exact controllability results are also proved. (Received August 19, 2015)