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Abdon Eddy Choque Rivero* (abdon.ifm@gmail.com), Universidad Michoacana de San Nicolas de Hida, CU Edificio C3A, IFM, 58000 Morelia, Morelia, Mexico. *The boundary control method applied to two velocity tree—like graph inverse problem*. Preliminary report.

We investigate the inverse problem of a two–velocity wave equation on a tree—like graph. A two component vector displacement is assumed to hold on each edge of the studied graph. Physical properties of the graph as the densities and lengths of each string, and also the topology of the tree as well as the angles between branching edges are recovered from the given data.

We extend the approach and result of the paper: (S. Avdonin, G. Leugering and V. Mikhaylov, *On an inverse problem for tree-like networks of elastic strings*, *Zeit. Angew. Math. Mech.*, **90** (2010), 136–150) to the case of variable velocities. It is shown that the inverse problem can be uniquely solved by applying measurements at all, or at all but one, boundary vertices.

This is a preliminary result based on a joint work with S. Avdonin and V. Mikhaylov.

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