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Jonathan Bell* (jbell@umbc.edu), Department of Mathematics & Statistics, UMBC, 1000 Hilltop Circle, Baltimore, MD 21250. *Neuronal Cable Theory on Dendritic Trees*.

We are interested in the qualitative behavior of diffusion problems on metric tree graphs. In this talk we extend neuronal cable theory to tree graphs that represent (idealized) dendritic trees, and discuss analytical results concerning threshold conditions, traveling wave solutions, bounds on conduction speed, and conduction block. As time permits we will mention work on an (inverse) problem in linear cable theory on tree graphs of recovering a parameter, namely the conductance on each branch. (Received January 26, 2014)