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Andrew R Francis* (a.francis@uws.edu.au), Centre for Research in Mathematics, Western Sydney University, Penrith, NSW 2751, Australia. *Tree-based phylogenetic networks.*

A binary phylogenetic network may or may not be obtainable from a tree by the addition of directed edges (arcs) between tree arcs. In this talk I will present a precise and easily tested criterion that efficiently determines whether or not any given network can be realized in this way. The proof provides a polynomial-time algorithm for finding one or more trees (when they exist) on which the network can be based. I will also talk about a number of interesting consequences, and some further relevant questions and observations.

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