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Ella Pavlechko* (epavlechko@gm.slc.edu), 1 Mead Way, Bronxville, NY 10708. *On Determining if Tree-based Networks Contain Fixed Trees.*

In a paper by Francis and Steel, they give a polynomial time algorithm to decide if a phylogenetic network, N , is tree-based. They then ask if given any fixed tree T and network N , can it be decided in polynomial time whether N is based on T ? We are able to show that such an algorithm would be NP -hard, and that the problem itself is fixed-parameter tractable. This is joint work with M. Anaya, O. Anipchenko-Ulaj, A. Ashfaq, J. Chiu, M. Kaiser, M. Shoji Ohsawa, M. Owen, E. Pavlechko, K. St. John, S. Suleria, K. Thompson, and C. Yap as part of the Fall 2016 Treespace REU at Lehman College, CUNY. (Received March 20, 2017)