▸ JENNIFER CHUBB, JEFFRY HIRST, TIMOTHY MCNICHOLL, *Computable partitions of trees.*

Department of Mathematics, George Washington University, Washington, D.C., USA.
E-mail: jchubb@gwu.edu.
URL Address: http://home.gwu.edu/~jchubb.
Department of Mathematical Sciences, Appalachian State University, Boone, North Carolina, USA.
E-mail: jlh@math.appstate.edu.
URL Address: http://www.mathsci.appstate.edu/~jlh/.
Department of Mathematics, Lamar University, Beaumont, Texas, USA.
E-mail: timothy.h.mcnicholl@gmail.com.

The study of effective versions of Ramsey's theorem began with Jockusch in 1972 [2], and the reverse mathematics of the theorem has been studied extensively. In [1], we examine an adaptation of Ramsey's theorem to trees. If linearly ordered n-tuples of nodes (n-chains) in the binary tree are colored with k colors, then there exists a monochromatic subtree isomorphic to the full binary tree. In reverse mathematics, Ramsey's theorem for n-element subsets of natural numbers follows from the tree theorem for n-chains, both of which are, for $n \geq 3$ equivalent to ACA_0 over RCA_0.

If the coloring of n-chains is computable, there is a bound on the complexity of the monochromatic subtree. In particular, if n-chains of nodes are computably colored with k colors, there is a Π^0_n monochromatic subtree. Furthermore, this bound is sharp: For any $n \geq 2$ there is a computable coloring of n-chains for which there is no Σ^0_n monochromatic subtree.

[1] Jennifer Chubb, Jeffry Hirst, Timothy McNicholl, *Reverse mathematics, computability, and partitions of trees*, ***Journal of Symbolic Logic***, vol. 74 (2009), pp. 201–215.

[2] Carl Jockusch, *Ramsey's theorem and recursion theory*, ***Journal of Symbolic Logic***, vol. 37 (1972), pp. 268–280.