1037-05-204 **Jeremy M. Aikin*** (jaikin@math.lsu.edu), Mathematics Department, Louisiana State University, Baton Rouge, LA 70803-4918. *The structure of crossing separations in matroids.*

Oxley, Semple and Whittle described a tree decomposition for a 3-connected matroid M that displays, up to a natural equivalence, all non-trivial 3-separations of M. Crossing 3-separations gave rise to fundamental structures known as flowers. In this talk, we define a generalized flower structure called a k-flower, with no assumptions on the connectivity of M. We give a complete characterization of k-flowers in terms of the local connectivity between petals. (Received February 02, 2008)