962-20-787 **Jon McCammond*** (jon.mccammond@math.tamu.edu), Department of Mathematics, TAMU 3368, Texas A&M University, College Station, TX 77843-3368, and **Murray Elder** (melder@math.tamu.edu), Department of Mathematics, TAMU 3368, Texas A&M University, College Station, TX 77843-3368. *An algorithm to detect a nonpositively-curved metric simplical complex.*

A metric simplical complex is a simplicial complex in which constant curvature metrics (with identical curvature constants) have been consistently assigned to each simplex. If such a complex has a metric of nonpositive curvature in the sense of Alexandrov, then a number of consequences about the structure of the fundamental group follow immediately. Unfortunately, there currently exist very few cases where it is possible to determine whether a given finite metric simplicial complex has a metric of nonpositive curvature. In this talk we will discuss recent work with Murray Elder in which we provide such an algorithm using the theory of Groebner bases from computational algebraic geometry. (Received September 26, 2000)