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Safia Chettih* (safia@uoregon.edu). *Topology of Configurations on Graphs.*

Given a graph Γ , suitably subdivided, we can construct a discretized model for its n -configuration space that is also a cubical complex. This complex is locally CAT(0) or nonpositively curved. Applying a discrete version of Morse theory to this complex simplifies it within its homotopy type, by ‘flowing’ most of the cells onto a smaller subset of critical cells. I will describe this discrete Morse flow and give explicit presentations for homology and cohomology classes as well as pairings for ordered and unordered configurations of two points on trees, and talk about the geometric and combinatorial structures interrelating configurations on graphs. (Received September 21, 2015)