1163-49-132   **Tuyen Tran*** (`ttran18@luc.edu`), **Mau Nam Nguyen**, **Wondi Geremew** and **Samuel Reynolds**. *DC Progamming for Hierarchical Clustering.*

Multilevel hierarchical clustering has a long history and enormous important applications in data mining and statistics. In this talk, we consider a different formulation of the bilevel hierarchical clustering problem, a commonly used model in designing optimal multicast networks and a discrete optimization problem which can be shown to be NP-hard. Our approach is to reformulate the problem as a continuous optimization problem by making some relaxations on the discreteness conditions. Then, Nesterov's smoothing technique and a numerical algorithm for minimizing difference of convex functions called the DCA are applied to cope with the nonsmoothness and nonconvexity of the problem. Numerical examples are provided to illustrate our method. (Received September 15, 2020)