The Electronic Journal of Linear Algebra.
A publication of the International Linear Algebra Society.
Volume 3, pp. 23-30, March 1998.
ISSN 1081-3810. http://math.technion.ac.il/iic/ela

ELA

ULTRAMETRIC SETS IN EUCLIDEAN POINT SPACES*

MIROSLAV FIEDLER†

Dedicated to Hans Schneider on the occasion of his seventieth birthday.

Abstract. Finite sets S of points in a Euclidean space the mutual distances of which satisfy the ultrametric inequality $\rho(A,B) \leq \max\{\rho(A,C), \rho(C,B)\}$ for all points in S are investigated and geometrically characterized. Inspired by results on ultrametric matrices and previous results on simplices, connections with so-called centered metric trees as well as with strongly isosceles right simplices are found.

AMS subject classifications. 51K05, 05C12.

Key words. Ultrametric matrices, isosceles, simplex, tree.

*Received by the editors on 14 January 1998. Accepted on 11 March 1998. Handling editor: Daniel Hershkowitz.

†Institute of Computer Science Czech Academy of Sciences, Pod vodárenskou věží 2, 182 07 Praha 8, The Czech Republic (fiedler@math.cas.cz). This research was supported by grant GACR 201/95/1484.