

1154-05-441

**Kate Lorenzen\*** (lorenkj@iastate.edu), **Boris Brimkov**, **Ken Duna**, **Leslie Hogben**,  
**Carolyn Rienhart**, **Sung-Yell Song** and **Mark Yarrow**. *Constructions of distance Laplacian  
cospectral graphs.*

Graphs are mathematical objects that can be embedded into matrices. Two graphs are cospectral if they have the same set of eigenvalues with respect to a matrix. In this talk, we discuss two constructions of cospectral graphs for the distance Laplacian matrix. The first uses vertex twins which have predictable eigenvectors and eigenvalues in the distance Laplacian. The second develops a relaxation of twins called vertex cousins. This second construction produces the only pair of bipartite distance Laplacian cospectral graphs on eight vertices. (Received September 04, 2019)