

1116-05-1118 **Aida Abiad*** (a.abiadmonge@maastrichtuniversity.nl), Maastricht, Netherlands. *On the distance spectra of graphs.*

The distance matrix of a graph G is the matrix containing the pairwise distances between vertices. The distance eigenvalues of G are the eigenvalues of its distance matrix and they form the distance spectrum of G . We determine the distance spectra of halved cubes, double odd graphs, and Doob graphs, completing the determination of distance spectra of distance regular graphs having exactly one positive distance eigenvalue. We characterize strongly regular graphs having more positive than negative distance eigenvalues. We give examples of graphs with few distinct distance eigenvalues but lacking regularity properties. We also determine the determinant and inertia of the distance matrices of lollipop and barbell graphs.

This is joint work with Ghodrattollah Aalipour, Zhanar Berikkyzy, Jay Cummings, Jessica De Silva, Wei Gao, Kristin Heysse, Leslie Hogben, Franklin H.J. Kenter, Jephian C.-H. Lin, and Michael Tait. (Received September 17, 2015)