connectivity_matrix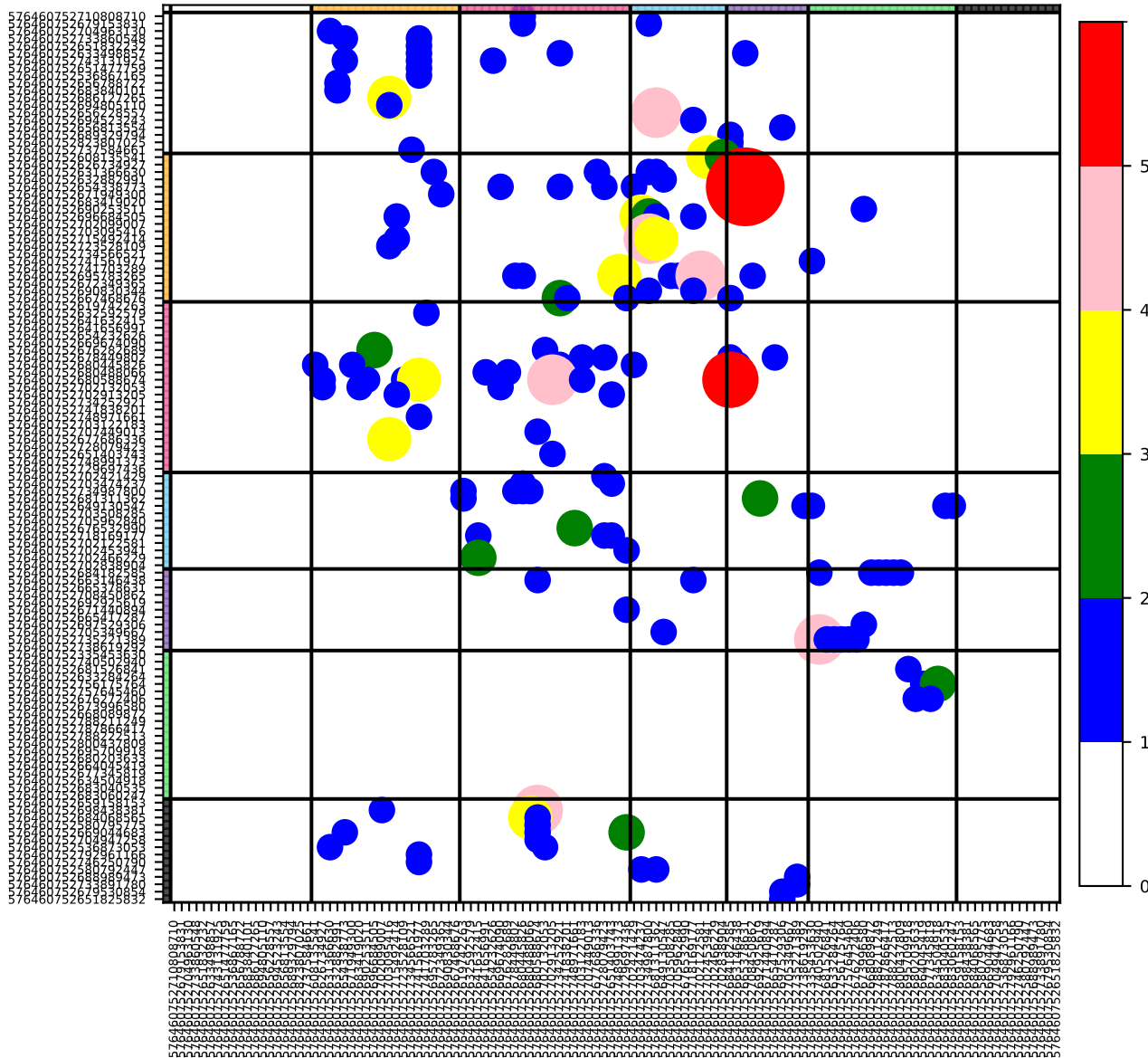_gt