

1158-57-222

**Alexander Zupan\*** (zupan@unl.edu). *Distance and intersection number in the reducing sphere complex.*

The Powell Conjecture proposes a generating set for the group of diffeomorphisms of the 3-sphere that preserve a Heegaard surface of genus  $g$ . In recent work, we showed that the Powell Conjecture is equivalent to the assertion that the reducing sphere complex is connected. Given a Heegaard surface  $\Sigma_g$  for  $S^3$ , the reducing sphere complex  $\mathcal{R}(\Sigma_g)$  is the full subcomplex of the curve complex generated by those curves that bound disks in both handlebodies cut out by  $\Sigma_g$ . In this talk, we will prove that although any pair of reducing curves meeting in only four points is connected by a path in  $\mathcal{R}(\Sigma_g)$ , the distance between two such curves can be arbitrarily large, starkly contrasting the relationship between distance and intersection number in other related complexes. (Received March 02, 2020)