1067-20-425   **Yakov I Berchenko-Kogan*** (`yashabk@caltech.edu`), MSC 134 Caltech, 1200 E California Blvd, Pasadena, CA 91126. *Distance in the Ellipticity Graph.*

I. Kapovich and M. Lustig defined a curve complex analogue for free groups called the ellipticity graph, whose vertices are cyclic words and free splittings of the group. I present an algorithm that uses Stallings subgroup X-digraphs and Whitehead automorphisms to determine when the distance between two vertices of the ellipticity graph is two. In addition, I obtain a bound on the distance using Nielsen transformations. (Received September 02, 2010)