1135-55-1825 **Ananth Kalyanaraman**, **Methun Kamruzzaman** and **Bala Krishnamoorthy*** (kbala@wsu.edu). *Maximal interesting paths in the Mapper.*

The *Mapper* is a highly compact representation of high-dimensional data as a simplicial complex that captures its underlying structure. It has seen increased use recently in various domains ranging from biomedicine to analysis of voting patterns of lawmakers. Researchers have also been working on several algebraic topological aspects of the Mapper, e.g., stability under various choices of parameters. At the same time, the process of navigating the Mapper and extracting testable hypotheses related to the original data has not received much attention. We formulate this problem as one of identifying maximal interesting paths in the Mapper. We study the complexity of this problem. We then present an efficient heuristic based on dynamic programming. We illustrate the effectiveness of our method on a corn phenomics data set. (Received September 25, 2017)