1125-05-1538 **Xiangfei Ni***, nxf@zjnu.cn, and **Aihua Li**, lia@mail.montclair.edu. *Interlace Polynomials of Paths Attached to a Star Head.*

Graph polynomials have been used to describe interior structural properties of the underground graphs and have applications in other fields such as biology. In this paper, we study interlace polynomials of a special type of graph consisting of a path of size n and a star head of size m. We denote such a graph as T(n,m). The selection of such graphs is motivated by distribution networks of products. Both iterative and explicit formula for the interlace polynomial of T(m,n) are given. Several values of the polynomial are obtained which reflect properties of T(m,n). The result is applied to solve a matrix theory problem. (Received September 17, 2016)