1052-13-357

Alberto Corso* (corso@ms.uky.edu), Department of Mathematics, University of Kentucky, Lexington, KY 40506, and Uwe Nagel, Sonja Petrovic and Cornelia Yuen. Determinantal equations defining the special fiber ring of certain ideals. Preliminary report.

In a previous work, Corso and Nagel studied the algebraic properties of a class of monomial ideals arising from special bipartite graphs. These ideals, involving two distinct sets of variables, were dubbed Ferrers ideals. In particular, the special fiber ring of these ideals turned out to be defined by the two by two minors of a ladder. Using these equations we determine a special reduction of these ideals in a fashion that generalizes an old formula of Dedekind and Mertens about the relation of the contents of two polynomials and their product. Further, in some cases a specialization process produces an interesting class of monomial ideals generated in degree two. This class includes, for instance, (square-free) strongly stable ideals. We show that the equations defining the special fiber ring of these new specialized ideals are given by the two by two minors of a symmetric ladder, possibly with holes. This result extends some previous work of Conca and, later, Villarreal. (Received September 01, 2009)