

1099-13-199

Youngsu Kim* (kim455@purdue.edu), 150 N Univ ST, West Lafayette, IN 47907. *Tangent cones of some determinantal rings.*

For a Noetherian local ring (R, \mathfrak{m}) , we call $\text{gr}_{\mathfrak{m}}(R) := \bigoplus_{i \geq 0} \mathfrak{m}^i / \mathfrak{m}^{i+1}$ the *tangent cone* of R where $\mathfrak{m}^0 = R$. If R is an epimorphic image of a regular local ring (S, \mathfrak{n}) , i.e., $R = S/I$ for some S -ideal I , the tangent cone of R is isomorphic to $\text{gr}_{\mathfrak{n}}(S)/I^*$. We call I^* the *leading ideal* of I .

It is well known that if I is principal, then I^* is principal, i.e., the tangent cone is a complete intersection ring. In general I^* is not a complete intersection ideal even if I is. Goto-Heinzer-M. Kim showed that if I is a complete intersection of codimension 2 and I^* is at most 3-generated, then the tangent cone of R is Cohen-Macaulay. We study the Cohen-Macaulayness of the tangent cone of R when I is generated by the maximal minors of a matrix of “small” size. (Received February 08, 2014)