Non-very ample configurations arising from contingency tables

Hidefumi Ohsugi · Takayuki Hibi

Received: 23 April 2009 / Revised: 2 December 2009 / Published online: 31 March 2010 © The Institute of Statistical Mathematics, Tokyo 2010

Abstract In this paper, it is proved that, if a toric ideal possesses a fundamental binomial none of whose monomials is squarefree, then the corresponding semigroup ring is not very ample. Moreover, very ample semigroup rings of Lawrence type are discussed. As an application, we study very ampleness of configurations arising from contingency tables.

Keywords Fundamental binomial \cdot Toric ring \cdot Very ample configuration \cdot Lawrence lifting \cdot Combinatorial pure subring