

1154-13-1057

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Counterexamples for Cohen-Macaulayness of Lattice Ideals.

Let $\mathcal{L} \subset \mathbb{Z}^n$ be a lattice, I its corresponding lattice ideal, and J the toric ideal arising from the saturation of \mathcal{L} . Despite the close relation between I and J , we produce infinitely many examples, in every codimension, of pairs I, J where one of these ideals is Cohen–Macaulay but the other is not. (Received September 16, 2019)