

Examples of toric degenerations with infinitely generated semigroups

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Abstract: Given a complete equicharacteristic noetherian local domain R , and a valuation ring R_ν of its field of fractions dominating R without residue field extension, there is a faithfully flat degeneration of R to the semigroup algebra $k[t^\Gamma]$ where $k = R/m_R$ and $\Gamma = \nu(R \setminus \{0\})$. I will explain how to get equations for the total space of this toric degeneration whether the semigroup Γ is finitely generated or not and if time permits explore some consequences of the structure of these equations.