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On the graded Betti numbers of path ideals

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Abstract

Let $R = k[x_1, \dots, x_n]$, where k is a field. Fix an integer t such that $2 \leq t \leq n$. Associated to a directed graph G is a monomial ideal, called the path ideal (of length t), and denoted by $I_t(G)$, whose generators correspond to the directed paths of length t in G . Let Γ be a directed rooted tree. We study some algebraic invariants of the path ideal of Γ . We determine all the graded Betti numbers of the path ideal of Γ with respect to graphical terms.

Joint work: D. Kiani.