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O'Keefe**. *Path ideals and their free resolutions.*

Let  $\Gamma$  be a rooted (directed) tree and let  $t$  be a positive integer. The path ideal  $I_t(\Gamma)$  of  $\Gamma$  is the ideal generated by monomials corresponding to (directed) paths of length  $(t-1)$  in  $\Gamma$ . In this talk, we shall discuss the minimal free resolution and related invariants of  $I_t(\Gamma)$ . In particular, we give a bound for the regularity, compute the linear strand, and study property  $N_{t,p}$  of  $I_t(\Gamma)$ . (Received January 25, 2010)