

1176-13-196

Cheng Meng* (cheng319@purdue.edu). *Strongly Lech-independent ideals and Lech's conjecture.*

We introduce the notion of strongly Lech-independent ideals as a generalization of Lech-independent ideals defined by Lech and Hanes, and use this notion to derive inequalities on multiplicities of ideals. In particular we prove that if $(R, \mathfrak{m}) \rightarrow (S, \mathfrak{n})$ is a flat local extension of local rings such that S is the localization of a standard graded ring over a field at the homogeneous maximal ideal, $\mathfrak{m}S$ is the localization of a homogeneous ideal and is \mathfrak{n} -primary, then $e(R) \leq e(S)$. (Received January 23, 2022)