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Evan Houston* (eghousto@uncc.edu). *Star operations on Noetherian domains*. Preliminary report.

A star operation on an integral domain R is a closure operation on the ideals of R that behaves well with respect to principal ideals. One shows easily that the domain R has all nonzero ideals divisorial if and only if R has only one star operation. Motivated by results of Heinzer and Bass/Matlis, which characterize domains with only one star operation in the integrally closed and Noetherian cases, we were motivated to study domains with only finitely many star operations. We have a complete characterization in the integrally closed case. The Noetherian case easily reduces to the local case, where we have a characterization in the infinite residue field case. In this talk, we recall these characterizations and report on progress in the local finite residue field case. (Received January 18, 2015)