1147-13-357   **Steven Dale Cutkosky*** (`cutkoskys@missouri.edu`), University of Missouri, Columbia, MO 65211. *Extensions of associated graded rings along valuations.*

Suppose that $R \to S$ is an extension of Noetherian local domains, ν is a valuation dominating R and ω is an extension of ν to a valuation dominating S. We discuss the general question of when the associated graded ring along ω, $\mathrm{gr}_\omega(S)$, is a finitely generated $\mathrm{gr}_\nu(R)$-module. We first discuss criteria and some necessary and sufficient conditions for this extension to be finitely generated after some blowing up. We then discuss some recent joint work of the author with Hussein Mourtada and Bernard Teissier, giving a very simple algorithm for computing generators of the extension in a primitive extension. It follows that the extension of graded rings along the valuation is a finitely generated extension in some very general situations, and we can explicitly compute the generators. (Received January 21, 2019)