1104-13-296   **William Heinzer** and **Youngsu Kim*** (`kim455@purdue.edu`), University of California, Riverside, and **Matthew Toeniskoetter**. *Blowing up finitely supported complete ideals in a regular local ring.*

Let R be a regular local ring and I a finitely supported R-ideal. We investigate singularities of $\operatorname{Proj} \overline{R[It]}$, where $\overline{R[It]}$ denotes the integral closure of the Rees algebra $R[It]$. We are able to prove that for a local ring S on $\operatorname{Proj} \overline{R[It]}$, if S is a UFD, then S is regular. This is a generalization of a result of Lipman and Huneke-Sally in dimension 2. Furthermore, we show that if $\operatorname{Proj} \overline{R[It]}$ is locally factorial, then it is the non-singular model obtained by a finite number of blowups at the non-singular closed points that correspond to the base points of I. In particular, if $\operatorname{Proj} \overline{R[It]}$ is locally factorial, then it is non-singular. (Received September 03, 2014)

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