

**Meeting:** 999, Nashville, Tennessee, SS 8A, Special Session on Algebraic Geometry and Commutative Algebra

999-14-252            **Steven Dale Cutkosky\*** (cutkoskys@missouri.edu), Dept. Math., University of Missouri,  
Columbia, MO 65211. *Graded algebras of surface singularities.*

We associate a graded algebra  $T_X$  to a resolution of singularities  $\pi : X \rightarrow \text{spec}(R)$ , where  $R$  is the complete local ring of a normal surface singularity.  $T_X$  is the multi-graded ring of functions vanishing to prescribed multiplicities along the components of the exceptional locus of  $\pi$ . We prove that  $R$  is a rational singularity if and only if the  $T_X$  are finitely generated  $R$  algebras for all resolutions  $X$  of  $\text{spec}(R)$ . (Received August 24, 2004)