

Meeting: 1003, Atlanta, Georgia, SS 20A, AMS Special Session on Commutative Algebra, I

1003-14-772 **Steven D Cutkosky*** (cutkoskys@missouri.edu), Dept. Math., Univ. Missouri, Columbia, MO
65211. *Graded algebras and Poincare series associated to surface singularities.*

Suppose that (R, m, k) is a normal complete local ring of dimension 2, and k is algebraically closed of characteristic zero. If $X \rightarrow \text{spec}(R)$ is a resolution of singularities, then we associate a multi-graded R -algebra $T_X = \bigoplus \Gamma(X, \mathcal{O}_X(-D_n))$, where the D_n are the effective divisors with exceptional support on X . We show that T_X is a finitely generated R -algebra for all resolutions X if and only if R has a rational singularity. We also give criterion for a Poincare series associated to T_X to be rational. (Received September 29, 2004)