1019-14-150   **David R Morrison*** (`drm@math.duke.edu`), Department of Mathematics, Durham, NC 27708.
Sheaves and Metrics on Canonical Singularities. Preliminary report.

An inductive classification of the canonical singularities in dimemsion three was given by Miles Reid 25 years ago. The structure of these singularities is of current interest due to two related questions: (1) what is the nature of limiting Calabi–Yau metrics near such singular points, and (2) what is the local structure of sheaves near such singular points?

One of the relationships between these questions comes from physics: one would like to place D-branes at such singular points, and the analysis of such D-branes can either be carried out using a limiting Calabi–Yau metric or using sheaf techniques.

Much work has been done on both of these questions assuming that the total space of the singularity is a real or complex cone. We will discuss the connection between the results for cones and the general situation, in both the sheaf and metric approaches. (Received August 13, 2006)