M. Roczen: On the String-Theoretic Euler Numbers of 3-dimensional Simple Singularities

EUROMATH Workshop
Institute of Mathematics Simon Stoilov
Bucharest, September 6, 2001

Abstract.

This is a report on joint work with D. I. Dais.

The string-theoretic E-functions $E_{str}(X;u,v)$ of normal complex varieties X having at most log-terminal singularities are defined by means of snc-resolutions. We give a direct computation of them in the case in which X is the underlying space of the 3-dimensional **A-D-E** singularities by making use of a canonical resolution process. Moreover, examining $e_{str}(X) = \lim_{u,v\to 1} E_{str}(X;u,v)$, we prove, for this class of singularities, that a conjecture of Batyrev concerning the possible range of the string-theoretic index is true only after a slight revision. Finally, we compute the string-theoretic Euler number for several compact complex threefolds with prescribed **A-D-E** singularities.