Hilbert coefficients, generalized Hilbert functions, and associated graded rings

Claudia Polini
University of Notre Dame

We will explore the relationship between Hilbert coefficients, the depth of associated graded rings, and the normalization of ideals. We will revisit long standing open problems, and we will survey recent developments aimed at treating the case of ideals that are not necessarily zero-dimensional. These new results involve the use of generalized Hilbert functions.