GIULIO CAVIGLIA, Purdue University

Betti tables of p-Borel-fixed ideals

We provide a counter-example to a conjecture of K. Pardue [Thesis, Brandeis University, 1994.], which asserts that if a monomial ideal is p-Borel-fixed, then its $\mathbb{N}$-graded Betti table, after passing to any field does not depend on the field. More precisely, we show that, for any monomial ideal I in a polynomial ring S over the ring $\mathbb{Z}$ of integers and for any prime number p, there is a p-Borel-fixed monomial S-ideal J such that a region of the multigraded Betti table of $J(S \otimes_{\mathbb{Z}} \ell)$ is in one-to-one correspondence with the multigraded Betti table of $I(S \otimes_{\mathbb{Z}} \ell)$ for all fields ℓ of arbitrary characteristic. There is no analogous statement for Borel-fixed ideals in characteristic zero.

[This is a joint work with Manoj Kummini]