Generic vanishing, gaussian maps, and Fourier-Mukai transform

Giusseppe Pareschi

I will illustrate an algebraic approach to generic vanishing, quite different from the other existing approaches, which are based on Hodge theory. The essential tools are first-order deformations of hyperplane sections and Fourier-Mukai transform on abelian varieties. As a byproduct one gets an algebraic proof of Green-Lazarsfeld's generic vanishing theorem. All the above material is the content of preprint math.AG/0310026