CHARACTERISTIC CLASSES OF SINGULAR VARIETIES

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Abstract

There are several ways to extend the notion of characteristic classes of nonsingular varieties to possibly singular ones. We discuss a few of these generalizations, with particular attention to the case of hypersurfaces of nonsingular varieties. For example, we give formulas for the so-called Chern-Schwartz-MacPherson's class of a singular variety in terms of the Chern classes of a bundle of differential forms with logarithmic poles, and relate the Chern-Schwartz-MacPherson class of a hypersurface to a notion of Mather-Chern class of a related scheme.

If time permits, we will also discuss some applications of explicit computations of characteristic classes of singular varieties to enumerative geometry.