

Algebraic and geometric restrictions of differential forms

Stanislaw Janeczko

(Institute of Mathematics PAS, Warsaw University of Technology)

By algebraic and geometric conormals and tangents we study germs of differential forms over singular varieties. The geometric restriction of differential forms to singular varieties is introduced and algebraic restriction of differential forms with vanishing geometric restrictions, called residual algebraic restrictions, are investigated. Residues of plane curve-germs, hypersurfaces, Lagrangian varieties as well as the geometric and algebraic restriction via a mapping were calculated. The natural exact sequence $0 \rightarrow \mathcal{R}^\bullet(Z) \rightarrow \mathcal{A}^\bullet(Z) \rightarrow \mathcal{G}^\bullet(Z) \rightarrow 0$ defines the residues $\mathcal{R}^\bullet(Z) = \mathcal{G}^\bullet(Z, M)/\mathcal{A}^\bullet(Z, M)$ with $\mathcal{A}^\bullet(Z) = \Lambda^\bullet(M)/\mathcal{A}^\bullet(Z, M)$ and $\mathcal{G}^\bullet(Z) = \Lambda^\bullet(M)/\mathcal{G}^\bullet(Z, M)$, where $\mathcal{G}^\bullet(Z, M)$ are geometric restrictions and $\mathcal{A}^\bullet(Z, M)$ are algebraic restrictions to Z .

This is a joint work with Goo Ishikawa.