

Algebraic Geometry Seminar

Test ideals for quasi-projective schemes in mixed characteristic

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Abstract: Building on breakthrough results of Andr e, Bhatt, Gabber and others, Ma and the speaker introduced a theory of mixed characteristic test ideals / multiplier ideals. There was a gap in this theory, it was defined only for complete local rings and the formation of these ideals did not seem to commute with localization. By utilizing ideas from Bhatt-Ma-Patakfalvi-Tucker-Waldron-Witsazek and the author (also see Takamatsu-Yoshikawa), we introduce a notion of multiplier / test ideals for normal schemes finite type over a complete local ring (in particular, our notion commutes with localization). We use our theory to study the non-nef locus and so obtain mixed characteristic versions of results on the non-nef locus for varieties over fields due to Ein-Lazarsfeld-Mustata-Nakamaye-Popa, Mustata, and Nakayama. This is joint work with Christopher Hacon and Alicia Lamarche.

Monday, October 18 at 3:00 PM in Zoom