

A characteristic-free approach to isolated singularities

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Abstract

In this talk we discuss some different tools and techniques that allow us to understand isolated singularities and related behavior in both mixed characteristic and in the characteristic free cases. In addition, we study how we can use these techniques to understand the structure of local rings based upon their Cohen-Macaulay type and show how they are related to characteristic-free versions of the ADE singularities. – This talk is based upon (select parts of) arXiv 2602.11519, 2512.18506, 2509.15396.

Keywords: Finite Cohen-Macaulay type, isolated Singularities, numerical Semi-group of a ring, Milnor Number, ADE singularities.