



GEOMETRY & PHYSICS SEMINAR

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The local-to-global principle via topology of the Balmer-Favi support

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Abstract:

Tensor triangulated categories (i.e. triangulated categories with a compatible monoidal structure) are among the most studied objects in homotopy theory, since they allow us to encapsulate various mathematical contexts in a coherent framework regulated by simple and easy to use axioms. The results of Balmer started the branch of mathematics known as tensor triangular geometry, relating the categorical structure of a tt category to the properties of its Balmer spectrum. Recently, Barthel, Heard and Sanders developed a theory of stratification via the Balmer-Favi support, classifying the localizing tensor ideals of a tt category by means of a support theory extending Balmer support from compact objects to the whole category.

The stratification of a tt category is equivalent to two properties: the minimality of special localizing ideals and the local-to-global principle. In this talk we will focus on the latter. Adapting a result of Benson, Iyengar and Krause, it has been shown that if the Balmer spectrum is noetherian then the local-to-global principle holds. But what if this condition is satisfied by the support of a single object, without imposing any condition on the ambient spectrum? We will show that this still implies the claim of the local-to-global principle for that object and deduce some interesting consequences.

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