Spectra of definable additive categories

MIKE PREST

School of Mathematics, Alan Turing Building, University of Manchester, Manchester, UK, mprest@manchester.ac.uk

Associated to any definable additive category (these include, for instance, finitely accessible additive categories with products) there are two topologies (on the same set of points): the Ziegler spectrum and its Hochster-dual, the Zariski spectrum. The latter is so called because it generalises the Zariski spectrum of a commutative noetherian ring, see [3] (also [1], [2]). There is associated "geometry", embodied in various presheaves (of rings, categories and representations). This suggests that a 4th vertex might be added to the triangle of (anti-)equivalences between 2-categories described in [4] (the 2-categories are those of: small abelian categories and exact functors; definable additive categories and interpretation functors; locally coherent Grothendieck categories and regular morphisms). I will outline the general picture and give some specific examples.

References

[1] Garkusha G., Prest, M. Classifying Serre subcategories of finitely presented modules *Proc. Amer. Math. Soc.*, **136**(3) 761–770, 2008.

[2] Garkusha G., Prest, M. Torsion classes of finite type and spectra in *K-theory and Noncommutative Geometry*, European Math. Soc., pp. 393–412, 2008.

[3] Prest, M. Remarks on elementary duality, *Ann. Pure Applied Logic*, **62**(2), 183–205, 1993.

[4] Prest, M. Abelian categories and definable additive categories arXiv:1202.0426, 2012.