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**Kent Vashaw\*** (kvasha1@lsu.edu). *Categorifications of Richardson Varieties via Serre Quotients by Prime Ideals.*

We describe a general theory of the prime, semiprime, completely prime, and primitive spectra of an abelian 2-category, providing a noncommutative version of Balmer's prime spectrum of a tensor triangulated category. The prime ideals of an abelian 2-category can be described in terms of containment conditions of either thick or Serre ideals of the 2-category. The Serre prime spectrum of a 2-category is linked to the set of Serre primes of its Grothendieck ring, which is a  $\mathbb{Z}_+$ -ring. We construct a categorification of the quantized coordinate rings of open Richardson varieties for symmetric Kac-Moody groups, by constructing Serre completely prime ideals of monoidal categories of modules of the KLR algebras, and by taking Serre quotients with respect to them. This is a joint work with Milen Yakimov. (Received February 05, 2018)