

Yukinobu Toda : Quasi-BPS categories for K3 surfaces

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In this talk, I will give semiorthogonal decompositions of derived categories of coherent sheaves on moduli stacks of semistable objects on K3 surfaces. An each summand is given by the categorical Hall product of subcategories called quasi-BPS categories, which approximate the categorification of BPS cohomologies for K3 surfaces. When the weight and the Mukai vector is coprime, the quasi-BPS category is shown to be smooth and proper, with trivial Serre functor etale locally on the good moduli space. So it gives a twisted analogue of categorical crepant resolution of the singular symplectic moduli space, and reminiscent categorical analogue of chi-independence phenomena. This is a joint work in progress with Tudor Padurariu.