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Crepant resolutions of log-terminal singularities and non-negativity of stringy Hodge numbers

Crepant resolutions have inspired connections between birational geometry, derived categories, representation theory, and motivic integration. Stringy Hodge numbers are invariants of log-terminal varieties designed to capture the Hodge theoretic information of a crepant resolution, even when no crepant resolution exists. In this talk, we will characterize log-terminal singularities as those admitting a crepant resolution by a stack. We will use this characterization to obtain a cohomological interpretation of stringy Hodge numbers. We will also give a complete classification of when stringy Hodge numbers are non-negative, including counter-examples to Batyrev's non-negativity conjecture. This is based on joint work with Jiahui Huang and Jeremy Usatine.