

\mathbb{X} -Stability conditions on Calabi-Yau- \mathbb{X} categories and quivers with superpotential

Yu Qiu

University of Hong Kong / Tsinghua University

We introduce \mathbb{X} -stability conditions (σ, s) on Calabi-Yau- \mathbb{X} categories $\mathcal{D}_{\mathbb{X}}$, where σ is a stability condition on $\mathcal{D}_{\mathbb{X}}$ and s a complex number. Our motivating examples come from Calabi-Yau- \mathbb{X} categories associated to quivers with superpotential from flat surfaces. We make categorical and geometrical links between the works of Bridgeland-Smith and Haiden-Katzarkov-Kontsevich, that realize stability conditions as quadratic differentials. As a byproduct, we show that the corresponding cluster- \mathbb{X} categories can be identified with topological Fukaya category. This is a project consisting joint works with Akishi Ikeda and Yu Zhou, who will present other applications.