

Projective crepant resolutions of toric cDV singularities and dimer combinatorics

Friday 22 December 2023 15:30 (50 minutes)

It is known that any projective crepant resolution of a three-dimensional Gorenstein toric singularity can be described as the moduli space of representations of the quiver associated to a consistent dimer model for some stability parameter. The space of stability parameters has the wall-and-chamber structure, that is, it is decomposed into chambers separated by walls. The moduli spaces associated to stability parameters contained in the same chamber are isomorphic, but a stability parameter contained in another chamber would give a different moduli space. Thus, it is important to detect the wall-and-chamber structure of the space of stability parameters to understand the relationships among projective crepant resolutions of three-dimensional Gorenstein toric singularities.

In this talk, I observe the wall-and-chamber structure for a particular class of three-dimensional Gorenstein toric singularities called toric compound Du Val (cDV) singularities. In particular, I will show that zigzag paths of a consistent dimer model associated to a toric cDV singularity control the wall-and-chamber structure. This talk is based on the preprint arXiv:2309.16112.

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