

On families of weighted K3 surfaces and strange duality.

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It is studied by Ebeling and Takahashi (series of papers, 2000's) that invertible polynomials in three variables, which define isolated hypersurface singularities in the complex 3-space, admit strange duality. In particular, those polynomials that define quadrilateral and exceptional bimodal singularities and their strange-dual partners (Ebeling and Ploog, 2013), and coupling pairs (Ebeling, 2006) are projectivized as anti-canonical sections in a 3-dimensional Fano weighted projective space, and thus families of weighted K3 surfaces are obtained. In the talk, we discuss that these families have interesting dualities associated to strange duality: duality of polytopes and duality of Picard lattices.