Homotopy classification of 4-dimensional toric orbifolds

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The classical cohomological rigidity conjecture is a longstanding question in toric topology, which asks the homeomorphism or diffeomorphism classification of toric manifolds via their integral cohomology rings. If we broaden our category to toric orbifolds, then there are many counter-examples which are not distinguished by their integral cohomology rings. However, it turned out that the homotopy type of these counter-examples can be distinguished by the integral cohomology ring. Hence, it is natural to ask the homotopy classification of toric orbifolds via their integral cohomology rings, and in this talk, we are aiming to answer this question for large class of 4-dimensional toric orbifolds. This is a joint work with Xin Fu and Tse Leung So.