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Three-dimensional Calabi-Yau cones with 2-torus action

There are two main constructions of Calabi-Yau cones in dimension 3. Firstly, the anti canonical cones over (log) del Pezzo surfaces and secondly via Gorenstein toric singularities. The toric construction automatically comes with the action of a 3-dimensional torus and the Calabi-Yau condition is automatically fulfilled. For the construction from del Pezzo surfaces we only obtain a 1-dimensional torus action and the Kähler-Einstein condition for the del Pezzo surfaces is crucial to obtain a Calabi-Yau cone metric. In my talk I will address the remaining cases with 2-torus action by discussing a combinatorial approach which interpolates between the two previous constructions and also explain how
the Calabi-Yau property is reflected in this combinatorial language.

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