Log terminal singularities, platonic tuples and iteration of Cox rings

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Looking at the well understood case of log terminal surface singularities, one observes that each of them is the quotient of a factorial one by a finite solvable group. The derived series of this group reflects an iteration of Cox rings of surface singularities. We extend this picture to log terminal singularities in any dimension coming with a torus action of complexity one. In this setting, the previously finite groups become solvable torus extensions, and Cox rings are defined by trinomials corresponding to platonic tuples.

This is a joint work with Lukas Braun, Jürgen Hausen, and Milena Wrobel.