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Ursula Whitcher* (whitchua@uwec.edu). *Short tops and semistable fibrations.*

Calabi-Yau hypersurfaces in toric varieties described by reflexive polytopes have been used to investigate the physical phenomenon known as mirror symmetry. If the intersection of a reflexive polytope with a hyperplane yields a lower-dimensional reflexive polytope slice, then the corresponding Calabi-Yau varieties are fibered by lower-dimensional Calabi-Yau varieties. A top generalizes the construction of the upper half of a sliced reflexive polytope. In contrast to the classification of reflexive polytopes, tops may arise in infinite families. We describe an algorithm for constructing infinite families of tops over an arbitrary reflexive base. All lattice points of the tops we construct have last coordinate either 0 or 1; we call such tops *short tops*. We show that four-dimensional short tops correspond to semistable degenerations of K3 surfaces, and five-dimensional short tops yield semistable degenerations of Calabi-Yau threefolds. The lattice points in the top control the structure of the degeneration. This talk describes joint work with two University of Wisconsin - Eau Claire undergraduates, Ryan Davis and Adam Gewiss. (Received July 31, 2012)