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Shin-Yao Jow (syjow@umich.edu) and **Ezra Miller*** (ezra@math.umn.edu). *Multiplier ideals of sums via cellular resolutions.*

Howald [TAMS, 2001] proved a formula for multiplier ideals of monomial ideals using resolutions of singularities for toric varieties. Takagi [Amer. J. Math, 2006], using characteristic p methods, proved a formula for sums two general ideal sheaves in terms of multiplier ideals of products. In joint work with Shin-Yao Jow, we unify and generalize these results by constructing a complex of sheaves that resolves the multiplier ideal of any finite sum of ideal sheaves in terms of (direct sums of) multiplier ideals of products. The resolution we construct is cellular, in the sense that its boundary maps are encoded by the algebraic chain complex of a certain polyhedral complex. (Received August 02, 2007)