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Jay Yang* (jkyang@umn.edu). *Virtual Resolutions of Monomial Ideals on Toric Varieties.*

Virtual resolutions as introduced by Berkesch-Erman-Smith are free complexes for ideals in the Cox ring of a toric variety which can be simpler and more geometrically meaningful than the minimal free resolution. In the case of B-saturated monomial ideals in a smooth projective space, I prove there exists virtual resolutions with length bounded by the dimension of the ambient toric variety. This can be viewed as an analog of Hilbert's syzygy theorem and provides evidence suggesting such a statement should be true for virtual resolutions of ideals in smooth toric varieties. (Received January 19, 2021)