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Eric Katz* (EEKatz@math.uwaterloo.ca), 200 University Avenue West, Waterloo, Ontario N2L 3G1, Canada. *Tropical geometry and the Hodge theory of hypersurfaces.*

We study the ‘tropical motivic nearby fiber’ of a subvariety of an algebraic torus which is a motivic invariant constructed from its tropicalization and initial degenerations. Under suitable conditions, this invariant specializes to the Hodge-Deligne polynomial of the limit mixed Hodge structure of a corresponding degeneration. We consider the special case of hypersurfaces and show that certain algebraic geometric invariants constructed from the tropical motivic nearby fiber are well-behaved with respect to subdivision of the Newton polytope. From this, we give a new proof of some results of Danilov-Khovanskii on the χ_y -characteristic of hypersurfaces in algebraic tori. This is joint work with Alan Stapledon. (Received August 30, 2012)