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Tom Braden, June Huh, Jacob Matherne, Nicholas Proudfoot* (njp@uoregon.edu) and
Botong Wang. *Singular Hodge theory of matroids.* Preliminary report.

Given a hyperplane arrangement, one can use the intersection cohomology of a certain toric compactification of the complement to prove the top-heavy conjecture for the lattice of flats (Huh-Wang) and non-negativity of the Kazhdan-Lusztig polynomial (Elias-Proudfoot-Wakefield). In work in progress, the authors are constructing a combinatorial model for these intersection cohomology groups that should allow us to extend the results to arbitrary (non-realizable) matroids. (Received February 12, 2018)