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Sam Hopkins* (shopkins@mit.edu). *The coincidental down-degree expectations (CDE) property for posets and homomesy.*

Reiner, Tenner, and Yong recently introduced the coincidental down-degree expectations (CDE) property for posets. A poset P is CDE if the expected down-degree is the same for the uniform distribution on P and for the distribution on P that weights each element proportional to the number of maximal chains passing through that element. Reiner, Tenner, and Yong showed that many posets familiar to algebraic combinatorialists, such as certain intervals of the weak Bruhat order, are CDE. In earlier independent work with Chan, Haddadan, and Moci (which was motivated by some surprising combinatorial results arising from a new approach to Brill-Noether theory) we found a large family of CDE intervals of Young's lattice. In more recent work I extended these results to the shifted setting, thereby completing the case-by-case proof that all minuscule lattices are CDE, as was conjectured by Reiner-Tenner-Yong (a uniform proof was subsequently given by Rush). I will conclude by explaining how, thanks to a result of Striker, these results also establish that the antichain cardinality statistic is homomesic with respect to rowmotion or gyration acting on sets of order ideals of certain "balanced" shapes, extending a result of Propp and Roby. (Received September 20, 2017)