

1094-05-31 **Kyle Petersen*** (tpeter21@depaul.edu), Department of Mathematical Sciences, Chicago, IL
60614. *Combinatorics of the shard intersection order of a Coxeter group.*

Nathan Reading introduced the shard intersection order in 2011. This is a poset on the regions in a simplicial hyperplane arrangement, which, in the case of a Coxeter arrangement, contains the lattice of noncrossing partitions as a full-rank sublattice. Moreover, its rank generating function is the W -Eulerian polynomial.

I will discuss combinatorial models for the poset in types A, B, and D, and exhibit EL-labelings. The question of EL-shellability in general is still open. Further, I will discuss the idea of a *symmetric boolean decomposition* of the shard intersection orders, which is proved in type A and conjectured for all types. (Received July 19, 2013)