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Jessica Striker* (jessica.striker@ndsu.edu). *Permutation totally symmetric self-complementary plane partitions, and Catalan subsets.*

Alternating sign matrices and totally symmetric self-complementary plane partitions are equinumerous sets of objects for which no explicit bijection is known. In this talk, we identify a subset of totally symmetric self-complementary plane partitions corresponding to permutations, which is a subset of alternating sign matrices, by giving a statistic-preserving bijection. We use this bijection to define a new partial order on permutations, and prove the 132- and 213-avoiding permutation subposets are two distinct Catalan subposets: the Tamari lattice and the Dyck path containment order. (Received August 11, 2015)