

# Extreme diagonally and antidiagonally symmetric alternating sign matrices of odd order

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For each  $\alpha \in \{0, 1, -1\}$ , we count alternating sign matrices of fixed odd order that are invariant under the reflections in the diagonal and in the antidiagonal (DASASMs) and that have a maximal number of  $\alpha$ 's along the diagonal and the antidiagonal, as well as DASASMs with a minimal number of  $\alpha$ 's along the diagonal and the antidiagonal if  $\alpha = 0$ . In these enumerations, we encounter round numbers that have previously appeared in plane partition or ASM counting, namely the number of all ASMs, the number of cyclically symmetric plane partitions in a given box, and the number of vertically and horizontally symmetric ASMs.