

# Lexicographic shellability of sects

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*Based on joint work with Aram Bingham [1]*

We show that the Bruhat order on the sects of a symmetric variety of type  $AIII$  are lexicographically shellable. Our proof proceeds from a description of these posets as rook placements in a partition shape which fits in a  $p \times q$  rectangle. This allows us to extend an  $EL$ -labeling of the rook monoid given by Can to an arbitrary sect. As a special case, our result implies that the Bruhat order on matrix Schubert varieties is lexicographically shellable.

## References

- [1] A. Bingham and N. Diaz Morera, Lexicographic shellability of sects. <https://arxiv.org/abs/2312.15093>.