

**Title:** Decomposition of  $G \wr S_n$ -action on generalized Boolean algebras

**Abstract:** Let  $G$  be a finite group acting on the finite set  $X$  such that the corresponding (complex) permutation representation is multiplicity free. There is a natural rank and order preserving action of the wreath product  $G \wr S_n$  on the generalized Boolean algebra  $B_X(n)$ . The decomposition of this action is one of the applications of Okounkov-Vershik approach for the representation theory of  $G \wr S_n$ . This is part of a joint work with M. K. Srinivasan.