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**Katherine Anne Bird\*** (bird10000@gmail.com). *Dade's Ordinary Conjecture (DOC) for the Finite Special Unitary Groups.*

An ordinary character of a finite group  $G$  is the character of a representation of  $G$  over a field of characteristic 0. In the  $p$ -modular representation theory of  $G$ , where  $p$  is a prime dividing  $|G|$ , the ordinary irreducible characters of  $G$  are divided into disjoint sets called  $p$ -blocks which reflect the decomposition of the group algebra of  $G$  over a field of characteristic  $p$  into indecomposable two-sided ideals. An important problem is to classify the  $p$ -blocks. A first step is to count the number of ordinary characters in a block  $B$ .

The aim of DOC is to prove an alternating sum of the form

$$\sum_{C/G} (-1)^{|C|} k(N_G(C), B, d) = 0, \quad \forall d \geq 0$$

which counts the number of characters in  $B$  in terms of corresponding numbers in subgroups of  $G$  which are normalizers of chains of certain  $p$ -subgroups of  $G$ .

This has been shown for  $p$ -blocks,  $p$  dividing  $q$ , for  $\mathrm{GL}_n(q)$ ,  $\mathrm{SL}_n(q)$  and  $\mathrm{U}_n(q)$ . We prove DOC for  $\mathrm{SU}_n(q)$ . The main difficulties involved arise because the structure of the unitary groups is more complicated than that of the linear groups. The cancellations in the alternating sum in the unitary case are very different from those that occur in the general linear case. (Received August 14, 2012)