# Real Elements and Real-Valued Characters of Covering Groups of Elementary Abelian 2-Groups

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**Abstract.** In Section 2 of this paper, the maximum number of real elements possible in a covering group of $C_2^{(n)}$ is determined, and a description of those covering groups in which this maximum is attained is given. Among these "maximally real" examples is that covering group $G$ of $C_2^{(n)}$ which is generated by $n$ involutions. For this particular group, the Schur indices of real-valued irreducible characters of each degree are investigated in Section 4. The main result of this section is a set of recurrence relations describing the number of absolutely irreducible characters of $G$ of a given degree of each of three types (non-real-valued, and real-valued of index 1 or 2 over $\mathbb{R}$) in terms of related numbers for the corresponding group on $n-1$ generators.