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Characters of covering groups of elementary abelian 2-groups

A covering group of the elementary abelian 2-group Q of rank n is a group G for which $G/G' \cong Q$ and $G' = Z(G)$ is elementary abelian of order $2^{\binom{n}{2}}$. Designating a particular covering group amounts to writing the square of each of the n elements of a minimal generating set for G as a product of the $\binom{n}{2}$ simple commutators in the generators. One may investigate whether and when different such designations yield non-isomorphic covering groups. In this talk we discuss the question of how many characters of a covering group of Q may be real-valued, and describe up to isomorphism those groups in which the maximum possible number of real-valued characters is attained.