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*Depth of a Subgroup*

A subalgebra pair of semisimple complex algebras $B \subset A$ with inclusion matrix $M$ is depth two if $MM^tM < nM$ for some positive integer $n$ and all corresponding entries. If $A$ and $B$ are the group algebras of finite group-subgroup pair $H < G$, the induction-restriction table for irreducible characters equals $M$, and $S = MM^t$ satisfies $S^2 < nS$ iff the subgroup $H$ is depth three in $G$; similarly depth $n > 3$ by successive right multiplications of this inequality with alternately $M$ and $M^t$. For example, the pair of permutation groups $S_n < S_{n+1}$ has depth $2n-1$ (or more). In joint work with Kuelshammer and Burciu, we show that a subgroup $H$ has depth $2n+2$ if its core is an intersection of $H$ with $n$ conjugates of $H$.