Small Representations of Finite Classical Groups

Abstract:

Many properties of a finite group $G$ can be approached using formulas involving sums over its characters. A serious obstacle in applying these formulas seemed to be lack of knowledge over the low dimensional representations of $G$. In fact, the "small" representations tend to contribute the largest terms to these sums, so a systematic knowledge of them might lead to proofs of some conjectures which are currently out of reach.