CMI Mathematics Colloquium

April 18, 2023

On quasi Steinberg characters of complex reflection groups

Ashish Mishra

Consider a finite group G and a prime number p dividing the order of G. A p-regular element of G is an element whose order is coprime to p. An irreducible character χ of G is called a quasi p-Steinberg character if $\chi(g)$ is nonzero for every p-regular element g in G. The quasi p-Steinberg character is a generalization of the well-known p-Steinberg character. A group, which does not have a non-linear quasi p-Steinberg character, can not be a finite group of Lie type of characteristic p. Therefore, it is natural to ask for the classification of all non-linear quasi p-Steinberg characters of any finite group G. In this joint work with Digjoy Paul and Pooja Singla, we classify quasi p-Steinberg characters of all finite complex reflection groups.