Representations of finite classical groups

Abstract:

The classical groups, for example the general linear or orthogonal groups, defined over finite fields, constitute a considerable part of the finite simple groups. In order to improve on the usefulness of the classification of the finite simple groups, one is lead to study their linear representations.

In this talk I will give an introductory survey on some results and open questions in the representation theory of the finite classical groups. In particular, I will introduce a striking connection to crystal graphs arising in the representation theory of quantum algebras.

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