

# Character varieties and representation theory - 1

*Monday, 18 July 2022 11:30 (1 hour)*

Given a finite group  $G$ , one can define two natural rings: the character ring of  $G$  and the center of the group algebra of  $G$ . When  $G$  is abelian, the two rings are isomorphic via a Fourier transform. In the non-abelian case such a Fourier transform does not exist. In this lecture I will discuss the case where  $G$  is the general linear group over a finite field. We will see how to make a bridge between these two rings through the geometry of character varieties (moduli space of local systems on punctured Riemann sphere), the moduli space of Higgs bundles or quiver varieties.

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