

Junior Number Theory Days

A workshop in Number Theory for postdocs and graduating PhD students to showcase their research

DECEMBER 3 - 4, 2022



Let $Gal_{\mathbb{Q}} = Gal(\bar{\mathbb{Q}}/\mathbb{Q}) = Aut(\bar{\mathbb{Q}}/\mathbb{Q})$
 $i \mapsto -i$

Interested in (continuous) representations

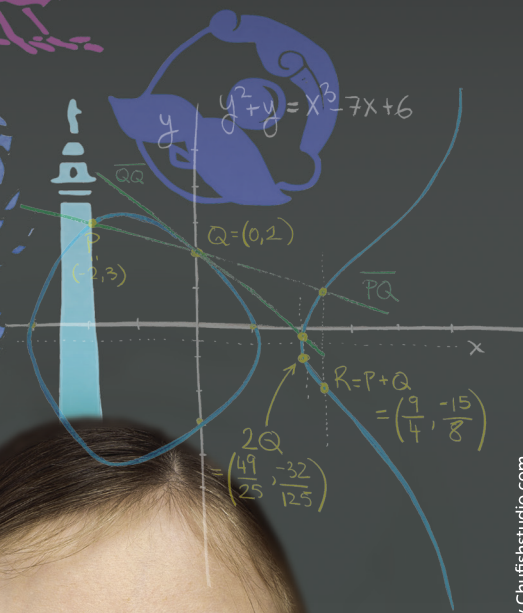
$\rho: Gal_{\mathbb{Q}} \rightarrow \dots$
 e.g. given $Gal_{\mathbb{Q}} \rightarrow \dots$
 so $Gal_{\mathbb{Q}}$ acts on \dots

$\mathbb{Q}_2 = \mathbb{C}, \bar{\mathbb{Q}}_p, \bar{\mathbb{F}}_p$
 $\rightarrow PGL_2(\mathbb{F}_3) \cong S_4$
 = terms of $4+1+1+1$



$K_1 = G(\mathbb{Z}_q)$
 $Ext_{SG_q}^*(S[K_1], S[K_2])$
 derived Hecke algebra
 (degree 0, usual Hecke algebra)

$\cong \bigoplus_{g_i} H^*(K_2 \cap g_i K_1 g_i^{-1})$
 representations K_1/K_2



<https://math.jhu.edu/~sakellar/JNTD2022>

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