Computing class groups by induction with generalised norm relations

ETIENNE Fabrice

University of Bordeaux, France

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$\tilde{K}$

$J_2 = A_4$

$J_1 = D_{10}$

$H = C_2 \times C_2$

$G = C_7 \times A_5$

$K = \tilde{K}^H$
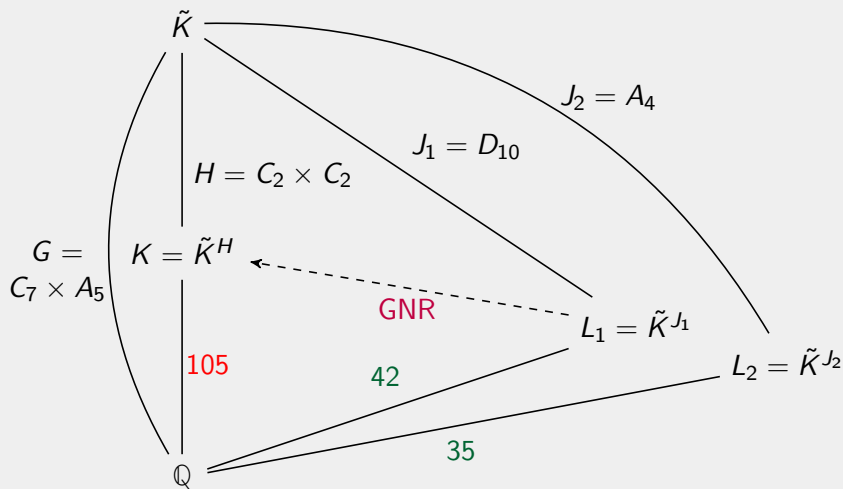
GNR

$L_1 = \tilde{K}^{J_1}$

$L_2 = \tilde{K}^{J_2}$

105

42

35

$\mathbb{Q}$

Computing class groups

Implementation

For K of degree $d_K = 105$ and discriminant
$\Delta_K = 2^{126} \cdot 29^{90} \cdot 67^{42} \simeq 1.7 \cdot 10^{246}$
I compute $Cl(K)$ in less than five days!

more details here!

https://www.math.u-bordeaux.fr/~fetienne002/article_
class_group.pdf