

GROUP (AND GALOIS) COHOMOLOGY

Let G be a finite group, and let M be an abelian group on which G acts.

GOAL: $H^0(G, M)$ and $H^1(G, M)$

$M^{\mathcal{D}G}$, makes M into a G -module, $\sigma \in G$ we write $\sigma \cdot m = \sigma(m) = m^\sigma$

NOTE: G is a profinite group w/ a prof. topology and we require the action of G on M to be continuous wrt the prof. top. on G and the discrete top. on M .

examples

$G = \text{Gal}(\mathbb{C}/\mathbb{R})$ acts on $\mathbb{C}, \mathbb{C}^\times$

$\{1, c\}$

acts (trivially) on $\mathbb{R}, \mathbb{R}^\times$

ex L/k fini

