Year: 2017 | Vol.: 90 | Fasc.: 1-2

Title: Rationality of the zeta function of the subgroups of abelian *p*-groups

Author(s): Olivier Ramaré

Given a finite abelian *p*-group *F*, we prove an efficient recursive formula for  $\sigma_a(F) = \sum_{H \leq F} |H|^a$  where *H* ranges over the subgroups of *F*. We infer from this formula that the *p*-component of the corresponding zeta-function on groups of *p*-rank bounded by some constant *r* is rational with a simple denominator. We also provide two explicit examples in rank r = 3 and r = 4, as well as, a closed formula for  $\sigma_a(F)$ .

## Address:

Olivier Ramaré CNRS / Institut de Mathématiques de Marseille Aix Marseille Université, U.M.R. 7373 Site Sud, Campus de Luminy, Case 907 13288 MARSEILLE Cedex 9 France