

# **SOME INTUITION INTO INTEGRAL GROUPS RINGS WITH TRIVIAL CENTRAL UNITS**

DAPHNÉ JANSSENS

ABSTRACT. It is known for finite groups  $G$  that the center of the unit group of an integral group ring  $\mathbb{Z}G$  is the direct product of a finite abelian group with a free abelian group of a finite rank. In this talk we are interested in describing the class of groups  $G$  for which the free part is trivial, the so-called cut groups. This property is a restrictive one and can be characterized with ring, group and representation theory. We will focus on giving intuition behind the restrictions on character values, prime divisors of  $G$  and conjugacy properties inside  $G$ . In the last part of the talk we will mention recent results about nilpotent and solvable groups.