

# GROUP ALGEBRAS WHOSE GROUP OF UNITS HAS 'SMALL' DERIVED LENGTH

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Although the investigation of the solvability of the group of units of group algebras was started in the '60s, a criteria, which is valid for arbitrary basis group, has been known only since 2008. About the derived length of the group of units we still know very little. Denote by  $FG$  the group algebra of a group  $G$  over a field  $F$ , and by  $U(FG)$  its group of units. In the case when  $FG$  is strongly Lie solvable, then its strong Lie derived length provides an upper bound on the derived length of  $U(FG)$ , moreover, all in the known cases so far, the equality holds. In this contribution, we are going to impose some conditions for  $F$  and  $G$ , under which the derived length of  $U(FG)$  is strictly less than the strong Lie derived length of  $FG$ . This enables us to construct some examples for strongly Lie solvable group algebra  $FG$ , such that  $U(FG)$  is metabelian, but  $FG$  is not strongly Lie metabelian. Furthermore, we will provide the exact lower bound on  $U(FG)$  for the case when  $G$  is nilpotent and nonabelian.

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