



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI  
SHORT ABSTRACT OF THESIS

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Our aim was to study the relation between the derived length of the group of units in a group algebra of a finite group over a field of positive characteristic and the commutativity of the group. We have mostly studied group algebras with their unit groups having derived length at most four and proved their commutativity when the characteristic of the field  $p$  is greater than or equal to seventeen. We also prove commutativity of  $G$  when the derived length of  $U$  is smaller than upper integer part of  $\log_2(2p)$  under certain additional hypothesis. As the derived length of the group of units is related to the strong Lie derived length of the group algebra, we have studied group algebras with strong Lie derived length at most four as well.