A NEW COHOMOLOGICAL CRITERION
FOR THE $p$-NILPOTENCE OF GROUPS

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ABSTRACT. Let $G$ be a finite group, $H$ a copy of its $p$-Sylow subgroup, and $K(n)^*(-)$ the $n$-th Morava $K$-theory at $p$. In this paper we prove that the existence of an isomorphism between $K(n)^*(BG)$ and $K(n)^*(BH)$ is a sufficient condition for $G$ to be $p$-nilpotent.