1035-20-1910 **Marcos Zyman*** (mzyman@bmcc.cuny.edu), Department of Mathematics, N-520, 199 Chambers Street, New York, NY 10007. *IA-automorphisms and localization of nilpotent groups.*

A group is called *p-local*, where p is a prime number, if every element in the group has a unique nth root for each n relatively prime to p. Given a nilpotent group G and a prime p, there is a unique p-local group $G_{(p)}$ which is, in some sense, the "best approximation" to G among all p-local nilpotent groups. $G_{(p)}$ is called the *p-localization* of G.

Let $G_{(p)}$ be the p-localization of a nilpotent group G, and let $IA(G)$ be the subgroup of $AutG$ consisting of those automorphisms of G that induce the identity on G/G', where G' denotes the commutator subgroup of G. $IA(G)$ turns out to be nilpotent, so its p-localization exists. Two groups G and H are said to be in the same *localization genus* if $G_{(p)}$ is isomorphic to $H_{(p)}$ for all primes p. The main result of this paper is that if two finitely generated, torsion-free, nilpotent, and metabelian groups lie in the same localization genus, their IA-groups also lie in the same localization genus. The method of proof involves basic sequences and commutator calculus. (Received September 20, 2007)