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On the extensions of linear groups by abelian varieties over a field of positive characteristic p

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Contents.

Introduction.

In this paper, we denote by k a fixed algebraically closed field of characteristic $p>0$. All algebraic varieties, algebraic groups and homomorphisms etc., are those defined over k, unless the contrary is explicitly mentioned. We denote by $\mathcal{A}$ the category of commutative algebraic groups. If we consider the case over a field of the characteristic zero, then such category is an abelian category, but in our case, since the characteristic p is positive, $\mathcal{A}$ is not abelian category. However $\mathcal{A}$ can be mapped into the abelian category Q of quasi-algebraic groups, Q being embedded into the abelian category $\mathcal{P} \cong \mathrm{Pro}(Q)$ of proalgebraic groups. Considering the completions of algebraic