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Extensions have been completely determined for elementary group schemes over a field, for example, as was achieved by M. Demazure and P. Gabriel [“Groupes algébriques. Tome I: Géométrie algébrique. Généralités. Groupes commutatifs” (1970; Zbl 0203.234)].


In the article under review we determine completely the group Ext_A^1(G, H) for G = ℤ/ₙ, μ_{n,A} or α_p and for H = ℂ_{m,A}, ℂ_{a,A} or ℂ_{(λ)} where (A, m) is a discrete valuation ring with maximal ideal m and ℂ_{(λ)} = Spec(A[X, 1/(λX + 1)]) with group law X → λX ⊗ X + X ⊗ 1 + 1 ⊗ X for λ ∈ m \ {0}. Ext_A^1(G, H) is also treated when G is as above and H is a finite or quasi-finite flat subgroup A-scheme of ℂ_{m,A}, ℂ_{a,A} or ℂ_{(λ)}.

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