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## Stratified bundles and étale fundamental group

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**Abstract.** For a smooth projective variety  $X$  over an algebraically closed field of characteristic  $p > 0$ , we show that all irreducible stratified bundles on  $X$  have rank 1 if and only if the commutator  $[\pi_1, \pi_1]$  of the étale fundamental group  $\pi_1$  of  $X$  is a pro- $p$ -group, and we prove that the category of stratified bundles is semi-simple with irreducible objects of rank 1 if and only if  $\pi_1$  is Abelian without  $p$ -power quotient. This answers positively a conjecture by Gieseker [4, page 8].

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