

Points in the fppf topology

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Abstract. Using methods from commutative algebra and topos theory, we construct topos-theoretical points for the fppf topology of a scheme. These points are indexed by both a geometric point and a limit ordinal. The resulting stalks of the structure sheaf are what we call fppf-local rings. We show that for such rings all localizations at primes are Henselian with algebraically closed residue field, and we relate them to the AIC and TIC rings. Furthermore, we give an abstract criterion ensuring that two sites have point spaces with identical sobrification. This applies in particular to some standard Grothendieck topologies considered in algebraic geometry: Zariski, étale, syntomic, and fppf.

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