

SET-THEORETIC REMARKS ON A POSSIBLE DEFINITION OF ELEMENTARY OO-TOPOS

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In axiomatizing the significance of oo-toposes in homotopy type theory, one realizes that dependent products and sums should be required to be recoverable within suitable classes of morphisms, namely some classes for which there exists a classifier. However, asking this of dependent products turns out to be a quite strong request. In fact, once we fix a Grothendieck universe, the possibility of finding classes of morphisms in an oo-topos which both have a classifier and are closed under dependent products will be proven to be equivalent to the universe being 1-inaccessible, a condition which is strictly stronger than merely being inaccessible.