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Sanath Devalapurkar* (sanathd@mit.edu). *Roots of unity in $K(n)$ -local stable homotopy theory.*

We prove that no $K(n)$ -local E_∞ -ring can have a primitive p^k -th root of unity in its homotopy. As a corollary, we find that the Lubin-Tate tower, an important object in arithmetic geometry, does not lift to a tower of derived stacks over Morava E -theory. (Received August 07, 2017)