1127-11-344 **Charlotte Chan*** (charchan@umich.edu), 2074 East Hall, 530 Church Street, Ann Arbor, MI 48109. *Semi-infinite Deligne–Lusztig varieties and the unramified Jacquet–Langlands correspondence.*

In 1979, Lusztig proposed a conjectural analogue of Deligne–Lusztig varieties for p-adic groups G which we call "semi-infinite." These varieties carry commuting actions by G and an unramified maximal torus T. We show that when G is a division algebra, the homology of these infinite-dimensional varieties is very nicely behaved: the T-eigenspaces are concentrated in a single degree and give rise to irreducible supercuspidal G-representations when the T-action is sufficiently generic. This verifies Lusztig's conjecture in this setting, and along the way, we prove two conjectures of Boyarchenko in full generality. Finally, we use geometric trace formulas to prove that semi-infinite Deligne–Lusztig varieties induce a cohomological realization of the (unramified) Jacquet–Langlands correspondence. (Received February 06, 2017)