

**Luke Wolcott**, University of Washington  
*Set theory questions in homotopy theory*

**Abstract:** We present a survey of the relevance of large cardinals and set theory to homotopy theory. In 1979, Bousfield proved the existence of homological localizations (essentially a set theory issue), and began an investigation into what is now a deep theory of homological Bousfield classes (HBCs) and Bousfield lattices. The analogous question of the existence of cohomological localizations is tied to large cardinal principles, and any subsequent investigation of cohomological Bousfield classes (CBCs) presents more set theory questions. We will give an overview of HBCs, CBCs, and their relationship to localizing subcategories, and present the main open problems in the area.