Tyler A. Brown* (tab5357@iastate.edu), Department of Mathematics, Iowa State University, Ames, IA 50011-2104, and Timothy H. McNicholl (mcnichol@iastate.edu). On the Degrees of Categoricity of Semi-Atomic $L^p$ Spaces.

In 2015, T. McNicholl proved that the purely atomic $L^p$ spaces with finitely many atoms are computably categorical when $p \geq 1$ is computable and that the degree of categoricity of purely atomic $L^p$ spaces with infinitely many atoms is $0'$ whenever $p \geq 1$, $p \neq 2$ is a computable real. Thereafter, it was shown by Clanin, McNicholl, and Stull that the purely non-atomic $L^p$ spaces are computably categorical when $p \geq 1$ is a computable real. In this talk we will investigate the semi-atomic $L^p$ spaces. For computable $p \geq 1$, $p \neq 2$ we then illustrate how the interplay between atomic and non-atomic parts of these spaces increases the degree of categoricity by one jump when a semi-atomic $L^p$ space has finitely and infinitely many atoms. (Received September 21, 2018)