1151-19-180 **Aaron Mazel-Gee*** (aaron@etale.site) and **Reuben Stern**. *Secondary algebraic K-theory and traces.* Preliminary report.

There is a tantalizing analogy between chromatic height and categorical dimension, which inspired Toën–Vezzosi to introduce *secondary algebraic K-theory* as an algebro-geometric counterpart to the extraordinary cohomology theory tmf topological modular forms. Secondary K-theory is a categorification of ordinary ("primary") algebraic K-theory, and refines both iterated algebraic K-theory and Grothendieck's K-theory of varieties.

Primary algebraic K-groups are chiefly computable through the trace maps that primary K-theory supports. Among these, only the *cyclotomic trace* map to TC is capable of detecting torsion. One would likewise hope for secondary K-theory to be computable through trace maps.

In this talk, I will survey the above ideas and then describe a new universal characterization of secondary K-theory akin to Blumberg–Gepner–Tabuada's universal characterization of primary K-theory. This characterization affords a trace map to a new invariant called *secondary* TC, a refinement of iterated TC that incorporates framed self-covering maps of the torus. (Received August 17, 2019)