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Jesse Wolfson* (wolfson@uci.edu), University of California, Irvine. *Derived motivic integration*. Preliminary report.

The Grothendieck ring of varieties is a universal source for “cut and paste invariants” of varieties such as Euler characteristics, Hodge-Deligne polynomials, zeta functions and more. Recent work of Zakharevich and Campbell allows us to realize the Grothendieck ring as π_0 of a K-theory spectrum, and we are still in the early stages of understanding what information this higher K-theory encodes. Motivic integration was introduced by Kontsevich in order to prove that the Hodge numbers of birational smooth Calabi-Yaus are equal, and it remains one of the most powerful tools to analyze the class of a variety in the Grothendieck ring. In this talk, I will discuss joint work-in-progress to lift motivic integration to a map of spectra with the goal of constructing new invariants of birational automorphisms of smooth Calabi-Yaus. This is joint work with Oliver Braunling, Michael Groechenig and Inna Zakharevich. (Received January 21, 2020)