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Raf Cluckers, Clifton Cunningham and **Julia Gordon*** (gor@math.ubc.ca), Department of Mathematics, University of British Columbia, 121-1984 Mathematics Rd., Vancouver, BC V6T 1Z2, Canada, and **Loren Spice**. *Motivic integration and Harish-Chandra characters*. Preliminary report.

This talk is about the project of using motivic integration to study Harish-Chandra distribution characters of certain supercuspidal representations of classical p -adic groups near the identity element. We show that the character belongs to a certain class of functions, defined by means of a language of logic, called "constructible motivic exponential functions". These functions are closely related to geometry; they are algorithmically computable, and when the residue characteristic p is large, it is possible to transfer the results about such functions between local fields of characteristic zero, and local fields of finite characteristic. I will discuss the potential implications of such transfer results for the characters. (Received September 09, 2009)