1122-60-139 **Martin Hairer**, **Gautam Iyer*** (gautam@math.cmu.edu), **Leonid Koralov**, **Alexei Novikov** and **Zsolt Pajor-Gyulai**. *Anomalous Diffusion and Intermediate time Homogenization for cellular flows.*

Cellular flows arise in various contexts, most notably as a as a two dimensional model for heat transport in Bernard convection cells. Our interest is to study the behaviour of a passive scalar diffusing in the presence of a cellular flow. Well known homogenization results show that the long time behaviour can be modelled by a Brownian motion, with an enhanced diffusion coefficient. In contrast, we show that on intermediate time the effective behaviour is instead governed by a Brownian motion time changed by the local time of an independent graph diffusion. The proof is probabilistic, using the framework of Freidlin-Wentzel. This is joint work with M. Hairer, L. Koralov, A. Novikov and Z. Pajor-Gyulai. (Received August 11, 2016)