1145-46-1442   **Hua Qiu*** (`huaqiu@nju.edu.cn`), Dept. of Maths, Nanjing University, Nanjing, Jiangsu 210093, Peoples Rep of China. *Metrics on fractals with symmetry and applications to sub-Gaussian heat kernel bounds.*

We prove that for a large class of self-similar sets with certain symmetry, including the nested fractals and the generalized Sierpinski carpets, the time changed Brownian motion via a symmetric self-similar measure enjoys two sided sub-Gaussian heat kernel estimates. The proof relies on that for a given symmetric self-similar measure, we can construct an intrinsic metric which is adapted to the weights given by the self-similar measure and satisfies the chain condition. We then illustrate our result by using the snow flake and the standard Sierpinski carpet as examples. Conversely, we show that on the standard Sierpinski carpet, if the symmetry of the self-similar measure is loosened, we can construct the metric but the chain condition fails. This is a joint work with Qingsong Gu, Kasing Lau and Huojun Ruan. (Received September 21, 2018)