1096-26-2340 **Yuval Peres***, Microsoft Research, 1 Microsoft Way, Redmond, WA 98052. *Dimension of fractional Brownian motion with variable drift.*

Let X be a fractional Brownian motion in $\mathbf{R}^d$. For any Borel function $f : [0,1] \to \mathbf{R}^d$, we express the Hausdorff dimension of the image and the graph of $X + f$ in terms of f. This is new even for the case of Brownian motion and continuous f, where it was known that this dimension is almost surely constant. The expression involves an adaptation of the parabolic dimension previously used by Taylor and Watson to characterize polarity for the heat equation. In the case when the graph of f is a self-affine McMullen-Bedford carpet, we obtain an explicit formula for the dimension of the graph of $X + f$ in terms of the generating pattern. In particular, we show that it is strictly bigger than the maximum of the Hausdorff dimension of the graph of f and that of X. Despite the random perturbation, the Minkowski and Hausdorff dimension of the graph of $X + f$ can disagree. (Joint work with Perla Sousi, Cambridge, UK) (Received September 17, 2013)