

## **abstract**

COMPUTER SCIENCE/DISCRETE MATH I

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

---

Let  $G$  be a finitely generated group equipped with the word metric. Assume that  $G$  does not admit a bi-Lipschitz embedding into Hilbert space. How can we quantify the extent to which  $G$  is non-Hilbertian? A natural approach is to consider the Hilbert compression exponent of  $G$ , i.e. the supremum over all  $s > 0$  such that there exists  $c > 0$  and a Lipschitz mapping  $f: G \rightarrow L_2$  such that for all  $x, y \in G$  we have  $\|f(x) - f(y)\| \geq c d(x, y)^s$ . The Hilbert compression exponent of  $G$  is clearly independent of the choice of generating set. In this talk we will discuss ways to compute this invariant via a variety of probabilistic and multiscale methods.

Joint work with Yuval Peres.