

COLLOQUIUM  
UNIVERSITY OF PITTSBURGH  
FRIDAY, MARCH 21, 2008  
704 THACKERAY HALL  
4:00 P.M.

PROFESSOR MASHA GORDINA  
UNIVERSITY OF CONNECTICUT

GAUSSIAN MEASURES & RIEMANNIAN GEOMETRY  
IN INFINITE DIMENSIONS

**ABSTRACT:** To keep the exposition concrete we will consider several examples of infinite-dimensional manifolds: Hilbert-Schmidt groups which are natural infinite-dimensional analogues of matrix groups, loop groups and the homogeneous space  $\text{Diff}(S^1)/S^1$  associated with the Virasoro algebra. We will list what is known about the Ricci curvature in each of the case, and how its boundness (or unboundness) is reflected in the heat kernel (Gaussian) measure behaviour. The motivation for studying these questions comes from physics, in particular, quantum field theory.

Refreshments served at 3:30 p.m.  
in the Math Dept. COMMON ROOM, Thackeray 705