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Scalar curvature of random metrics

We study Gauss curvature for random Riemannian metrics on a compact surface, lying in a fixed conformal class; our questions are motivated by comparison geometry. We explain how to estimate the probability that Gauss curvature will change sign after a random conformal perturbation of a metric, and discuss some extremal problems for that probability, and their relation to other extremal problems in spectral geometry.

If time permits, analogous questions will be considered for the scalar curvature in dimension $n > 2$, as well as other related problems (e.g. Q -curvature in even dimensions).

This is joint work with D. Jakobson and I. Wigman.