

UNIVERSITY OF SYDNEY

SCHOOL OF MATHEMATICS AND STATISTICS

Statistics Seminar

Friday August 17, 2.00pm., Carslaw Lecture Room 173 (level 1)

**EULER CHARACTERISTICS FOR GAUSSIAN
FIELDS ON MANIFOLDS**

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Abstract

I will start by briefly discussing some statistical problems related to mapping the brain, both the cerebrum (a 3-dimensional object) and the cerebral cortex, or "brain surface" (a 2-dimensional manifold in 3-dimensional space).

This problem has motivated recent deep results of Jonathan Taylor describing the random geometry of Gaussian random fields on abstract manifolds, which I will describe, relate back to the original problem, and also relate to the so-called "tube method" for estimating the distribution of the supremum of a Gaussian process.

*[** This work is joint with Jonathan Taylor. Details can be found in ie.technion.ac.il/Adler.phtml]*

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