

DIFFERENTIAL GEOMETRY/PDE SEMINAR

WEDNESDAY, MAY 17, 2006

PADELFORD C-36

3:50-5PM

Type II vanishing asymptotics of maximal Solutions to the
Ricci flow in R^2

Natasa Sesum

(COLUMBIA UNIVERSITY)

We consider the initial value problem

$$u_t = \Delta \log u,$$

$u(x, 0) = u_0(x) \geq 0$ in R^2 , corresponding to the Ricci flow, namely conformal evolution of the metric $u(dx_1^2 + dx_2^2)$ by Ricci curvature. It is well known that the maximal (complete) solution u vanishes identically after time $T = \frac{1}{4\pi} \int_{R^2} u_0$. Assuming that u_0 is compactly supported we describe precisely the Type II vanishing behavior of u at time T : we show the existence of an inner region with exponentially fast vanishing profile, up to proper scaling, a soliton cigar solution, and the existence of an outer region of persistence of a logarithmic cusp. It recovers rigorously formal asymptotics derived by J.R. King.

For more information about this seminar, visit the DG/PDE Seminar Web page (from the Math Department home page, www.math.washington.edu, follow the link **Seminars, Colloquia, and Conferences**).

The University of Washington is committed to providing access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment

for individuals with disabilities. To request disability accommodation contact the Disability Services Office at least ten days in advance at: 206-543-6450/V, 206-543-6452/TTY, 206-685-7264 (FAX), or dso@u.washington.edu.