DIFFERENTIAL GEOMETRY/PDE SEMINAR

WEDNESDAY, NOVEMBER 19, 2008
PADELFORD C-36
3:45–5PM

Hypersurfaces of constant curvature in hyperbolic space

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We study the problem of finding complete hypersurfaces in hyperbolic space determined by an equation of the second fundamental form with prescribed asymptotic boundary at infinity. We shall consider two special cases: 1) the class of strictly convex hypersurfaces (those with positive definite second fundamental form) and 2) hypersurfaces with mean convex asymptotic boundary at infinity. We first show that any complete noncompact strictly convex hypersurfaces must be vertical graphs in the upper half space model. Then we discuss existence results in the two cases using PDE method. This is joint work with Joel Spruck and Marek Szapiel.