DIFFERENTIAL GEOMETRY/PDE SEMINAR

Wednesday, May 12, 2010
Padelford C-36
4–5PM

Radiation field for Einstein Vacuum equations

Fang WANG
(MIT)

The radiation field introduced by Friendlander provides a direct approach to the asymptotic expansion of solutions to the wave equation at null infinity. I use this concept to study the asymptotic behavior of solutions to Einstein Vacuum equations, which are close to Minkowski space, at null infinity. By imposing harmonic gauge, the Einstein Vacuum equations reduce to a system of quasilinear wave equations on $\mathbb{R}^{1+n}_{t,x}$. I show that if the space dimension $n \geq 4$ the Møller wave operator is an isomorphism from Cauchy data satisfying the constraint equations to the radiation fields satisfying an analog of constraint equations on small neighborhoods of suitable weighted b-type Sobolev spaces.

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**).