DIFFERENTIAL GEOMETRY/PDE SEMINAR

THURSDAY, OCTOBER 3, 2013
PADELFORD C-36
1:30PM–2:30PM

The geometry of static spacetimes in General Relativity

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Geometrostatics is an important subdomain of Einstein's General Relativity. It describes the mathematical and physical properties of static isolated relativistic systems such as stars, galaxies, or black holes. For example, geometrostatic systems have a well-defined ADM-mass (Chrusciel, Bartnik) and (if this is nonzero) also a center of mass (Huisken-Yau, Metzger, Huang) induced by a CMC-foliation at infinity. We will present surface integral formulas for these physical properties in general geometrostatic systems. Together with an asymptotic analysis, these can be used to prove that ADM-mass and center of mass 'converge' to the Newtonian mass and center of mass in the Newtonian limit $c \to \infty$ (using Ehler's frame theory). We will discuss geometric similarities of geometrostatic and classical static Newtonian systems along the way.

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**).