DIFFERENTIAL GEOMETRY/PDE SEMINAR

THURSDAY, MARCH 9 , 2006
LOW 118
4-5PM

Yang-Mills detour complexes and conformal geometry

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On (pseudo-)Riemannian manifolds equipped with an auxiliary vector bundle and connection (V, D), we construct a class of sequences of differential operators which are complexes if and only if the connection D is Yang-Mills. In a special case this is the complex which controls the formal Yang-Mills deformation theory. In all cases the complexes are elliptic if the structure has Riemannian signature. Via a differential translation argument these complexes yield further differential complexes. In particular in dimension 4 we obtain some unexpected conformally invariant detour complexes that should have an interesting cohomology theory. This is joint work with Vladimir Soucek and Petr Somberg.

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**).