1041-58-194   **Erik VanErp*** (`erikerp@math.upenn.edu`), Erik van Erp, 1907 Ditmas Ave, Brooklyn, NY
11226. *Index theory on filtered manifolds.* Preliminary report.

The starting point for this talk is an index formula for hypoelliptic differential operators on contact manifolds. While the formula is elegant, its usefulness is severely limited by the fact that the natural geometric ("Dirac" type) operator associated to a contact structure is not hypoelliptic. We investigate this problem in the generalized context of filtered manifolds, and show that the failure of hypoellipticity of "Dirac" type operators is, in certain geometrically interesting cases, compensated by the existence of generalized Szego projectors. We prove a generalized Toeplitz index theorem for these cases. (Received August 11, 2008)