1024-35-61 **C. Denson Hill*** (dhill@math.sunysb.edu), Dept. of Mathematics, Stony Brook University, Stony Brook, NY 11794. *Failure and asymptotic failure of the Poincare lemma.*

We discuss the latest cutting edge of nonsolvability results for under/over determined systems of first order linear pde's. Namely this has to do with the Cauchy Riemann equations tangential to a CR manifold of general CR dimension and CR codimension. In addition to new nonsolvability results, with a micro local type of hypothesis, we introduce a new estimate of the shrinking rate of the diameter of the solvability set, which can be interpreted as an asymptotic nonsolvability, even when the system may be locally solvable. There are many examples, arising naturally in mathematics, where these new results apply, and the older ones do not. This is joint work with Mauro Nacinovich. (Received December 21, 2006)