Estimates for tangential Cauchy-Riemann equations with minimal smoothness

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Abstract: We study the regularity for the tangential Cauchy-Riemann equations and the associated Laplacian on CR manifolds with minimal smoothness assumption. Using commutators of vector fields, maximal L^2 estimates are obtained first without pseudodifferential operators. Based on the maximal L^2 results, Hölder and L^p estimates are obtained by using scaling and Campanato spaces. One application is to extend the embedding theorem of Boutet De Monvel to strongly pseudoconvex CR manifolds of class C^2.

(Joint work with Lihe Wang).