Top-degree local solvability for $\overline{\partial}_b$ on hypersurfaces of complex space

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Abstract: It has been conjectured, more than 30 years ago, in papers written by Paulo Cordaro, Jorge Hounie and F. Treves, that top-degree local solvability for $\overline{\partial}_b$ on a real-analytic hypersurface $M \subset \mathbb{C}^n$ near a point $p \in M$ is equivalent to the existence of an open neighborhood $U \subset M$ of p at no point of which the Levi form is definite. We establish the validity of this conjecture when M is rigid and the determinant of the Levi matrix does not vanish identically. Time permitting, we also discuss how this approach is suitable to attack the everywhere Levi degenerate case. This is joint ongoing work with Paulo Cordaro.