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**XIANGHONG GONG**, University of Wisconsin  
*Regularity for the CR vector bundle problem*

Let  $\omega$  be a square matrix of  $(0,1)$ -forms on a strongly pseudoconvex smooth real hypersurface  $M$  in  $\mathbf{C}^n$  with  $n \geq 4$ . Assume that  $\omega$  satisfies the formal integrability condition  $\bar{\partial}_b \omega = \omega \wedge \omega$ . We want to find a non-singular matrix  $A$  such that  $\bar{\partial}_b A = -A\omega$ . Assume that the dimension of  $M$  is at least seven. We will find local solutions  $A$  with sharp regularities in terms of the smoothness of  $\omega$ .

This is joint work with Sidney M. Webster.