## Applications of Théodoresco-type operators of quaternionic analysis to some classic inhomogeneous systems of PDE.

Michael Shapiro

ESFM-IPN, Mexico City, Mexico.

The  $\bar{\partial}$ -problem in  $\mathbb{C}^2$  can be embedded into quaternionic analysis determined by the (modified) Fueter operator, meanwhile the quaternionic analysis determined by the Moisil-Théodoresco operator plays the same role for the inhomogeneous div-rot system.

In the talk, it will be shown that those embeddings allow an efficient treatment of both inhomogeneous systems. In a similar way, Clifford analysis for the Dirac operator is employed for studying the  $\bar{\partial}$ -problem for functions and differential forms in  $\mathbb{C}^m$ . The work was partially supported by CONACYT projects as well as by Instituto Politécnico Nacional, Mexico, in the framework of COFAA and SIP programs.