## Slice regularity and Fueter regularity: a 3D–meeting point for two function theories

The construction of quaternionic regular functions by means of holomorphic functions dates back to Fueter. It has been reconsidered recently in the setting of slice regularity. In this talk we propose a new view to the connections between the two function theories. We consider left–regular functions in the kernel of the modified Cauchy–Fueter operator  $\mathcal{D} = 2\left(\frac{\partial}{\partial \bar{z}_1} + j\frac{\partial}{\partial \bar{z}_2}\right)$ . We show that every slice regular function can be modified through a second order term, vanishing on the 3D–domain of paravectors, to fulfill the condition of left–regularity. This construction allows to translate some results concerning left–regularity to the other function theory.