Fleurianne Bertrand (Universität Duisburg-Essen) : *Decomposing the Raviart-Thomas element space into a scalar and an orientation-conserving part.*

Abstract : This contribution deals with conforming high-order finite element discretizations of the vector-valued function space H(div) in 2 and 3 dimensions. A new set of basis functions on simplices is introduced, using a decomposition into an orientation setting part with the edgewise constant normal flux as a degree of freedom and an orientation conserving higher-order part. As a simple combination of lowest-order Raviart-Thomas elements and higher order Lagrange-elements, the basis is suited for fast assembling strategies.