

Monogenics in k variables

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Monogenic functions in one vector variable, and in particular homogeneous polynomials, have always played a key role in classical Clifford Analysis; they are defined as null solutions for the Dirac operator and provide models for (finite-dimensional) irreducible representations for the spin group. Monogenic polynomials in two vector variables (double monogenics) can be used to describe the structure of the set of polynomial solutions of the Rarita-Schwinger operator. In this talk we will generalize the notion of monogenic functions to an arbitrary number of variables. Using the notion of transvector algebras, we will then use these special polynomials to describe the structure of the kernel of arbitrary higher spin Dirac operators (generalizations of the Rarita-Schwinger operator).