

Computation of Function of Multivector and Matrix Using Generalised Spectral Basis

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Recursive formulas for explicit computation of generalised spectral basis are presented. The generated spectral basis allows straightforward computation of functions of matrices and multivectors of arbitrary Clifford geometric algebra $Cl_{p,q}$. The formulas are based on analysis of the roots of minimal polynomial and covers defective matrices/multivectors case. The method avoids matrix/multivector inversion and, therefore, often provides simplest symbolic answers. It can find application in Clifford algebra analysis, computation of Krylov spaces, etc.