

ON THE KERNEL OF THE VECTOR EPSILON-ALGORITHM

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The vector Epsilon-algorithm introduced by P. Wynn is a powerful method for accelerating the convergence of vector sequences. The algorithm is an extension of the scalar Epsilon algorithm, obtained by replacing the inverse of a real number in the scalar case, by the pseudo-inverse of a vector in the vector case. The kernel of the vector Epsilon is the set of sequences transformed by the algorithm to stationary sequences (the constant is a limit or anti-limit of the sequence). It is well-known that the kernel contains sequences satisfying some difference equations.

In this talk, we show that this condition is only sufficient and that the kernel contains other kind of sequences. We show also how the use of Clifford algebra, can be very helpful for understanding and deriving new results of the algorithm. In particular, we give necessary and sufficient condition for characterizing the kernel. Examples for illustrations as well as geometrical interpretations are given.

References

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