

New nonlinear subdivision schemes and their properties

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Subdivision schemes are a powerful tool for the fast generation of curves and surfaces in computer-aided geometric design. In such algorithms discrete data are recursively generated from coarse to fine scale by means of local rules. The stability and the convergence of such refinement process, as well as the smoothness properties of its limit function if it exists, have been the subject of active research in recent years.

Marquina and Serna [4] introduced a new class of ENO reconstruction techniques, called Power ENO methods, which were considered and analyzed in the subdivision context by K. Dadourian [3]. In this work, we analyze a generalization of the Powerp subdivision schemes, in [3], based on an harmonic weighted average instead of the plain harmonic average considered in [3]. Our development is motivated by the more complicated analysis of WENO subdivision schemes [1, 2].

REFERENCES

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