

Boundedness of some Multilinear Singular Integrals via Dyadic Martingales

(Talk)

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(joint work with Christoph Thiele, UCLA)

Demeter and Thiele posed a set of questions related to boundedness of several multilinear singular integral operators. We present some positive results obtained by probabilistic techniques. The core of our method consists of the following:

- Burkholder's connection between martingales and real-variable operators.
- The concept of the Bellman function, borrowed from control theory and developed by Nazarov, Treil, and Volberg.
- Time-frequency decomposition of Carleson and Fefferman, later adapted by Lacey and Thiele.

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