

On multilinear distorted multiplier estimate and its applications

kailong yang¹

¹Institute of Applied Physics and Computational Mathematics

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Abstract

In this article, we investigate the multilinear distorted multiplier estimate (Coifman-Meyer type theorem) associated with the Schrödinger operator $H = -\Delta + V$ in the framework of the corresponding distorted Fourier transform. Our result is the “distorted” analog of the multilinear Coifman-Meyer multiplier operator theorem in (missing citation), which extends the bilinear estimates of Germain, Hani and Walsh’s in (missing citation) to multilinear case for all dimensions. As applications, we give the estimate of Leibniz’s law of integer order derivations for the multilinear distorted multiplier for the first time and we obtain small data scattering for a kind of generalized mass-critical NLS with good potential in low dimensions $d=1,2$.

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multilinear_estimate20210702.pdf available at <https://authorea.com/users/425617/articles/530427-on-multilinear-distorted-multiplier-estimate-and-its-applications>

References