Non-smooth atomic decomposition of 2-microlocal spaces with variable integrability

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This talk is based on a joint work with H. Kempka. We generalize the atomic decomposition results for 2-microlocal Besov and Triebel-Lizorkin spaces with variable integrability $B^{\boldsymbol{w}}_{p(\cdot),q(\cdot)}(\mathbb{R}^n)$ and $F^{\boldsymbol{w}}_{p(\cdot),q(\cdot)}(\mathbb{R}^n)$. We show that one can relax the assumptions on the smoothness of the atoms, the building blocks of the atomic decomposition, without loosing any crucial information compared to smooth atomic decompositions. As an application, we state a pointwise multipliers result for these spaces.

References

[1] H. Gonçalves, H. Kempka, Non-smooth atomic decomposition of 2-microlocal spaces and application to pointwise multipliers (submitted Apr. 2015).