Sobolev spaces and differential operators on LCA groups

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We investigate Sobolev spaces on locally compact abelian groups (LCA groups). In our current studies we consider two definitions of Sobolev spaces. The first one is formulated in terms of the Fourier transform on a LCA group. The second one requires a notion of differential operator on a LCA group, introduced by A. Wawrzyczyk in [2]. We show that both definitions are equivalent under some natural conditions [1].

References

[1] T. Kostrzewa, *S*obolev spaces and differential operators on LCA groups., forthcoming.

[2] A. Wawrzyczyk, *O*n Tempered Distributions and Bochner-Schwartz Theorem on arbitrary Locally Compact Abelian Groups. Colloq. Math. Vol. 19 (1968), 305318.