

Factorization theorems in Denjoy-Carleman classes associated to representations of $(\mathbb{R}^d, +)$

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The purpose of this talk is to discuss a strong factorization theorem of Dixmier-Malliavin type for ultradifferentiable vectors associated to broad classes of representations of $(\mathbb{R}^d, +)$ on sequentially complete locally convex Hausdorff spaces. We employ our results to show that various convolution algebras and modules of ultradifferentiable functions commonly occurring in analysis satisfy the strong factorization property. In general, a module \mathcal{M} over a non-unital algebra \mathcal{A} is said to have the *strong* factorization property if $\mathcal{M} = \{a \cdot m \mid a \in \mathcal{A}, m \in \mathcal{M}\}$.

The talk is based on collaborative work with Andreas Debrouwere and Bojan Prangoski.