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Properties of analytical maps on infinite dimensional locally convex spaces

A space of analytical functions, denoted by $A(X)$, defined on a finite dimensional locally convex space X is studied. $A(X)$ consists of all functions that ate continuous on compact sets and whose restrictions to any finite dimensional plane $x+N$, where $N \subset X$ is a finite dimensional subspace and $x \in X$, is a holomorfic functionl. $A(X)$ is given the topology of uniform convergence on compact sets. An continuously embedded subspace $A_c(X) \subset A(X)$ (Cylindrical analytical functions), is also considerd. In particular, the Fourier transforms of the dual spaces $A'(X)$ and $A'_c(X)$ is studied and the Paley-Wiener theorems are generalised. Some of these results will be presented. The results can be used in the Quantum field theory in the study of the Feynman integral.

Reference: A. YU. Khrennikov, Infinite-dimensional pseudodifferential operators, Math. USSR Izvestiya Vol. 31(1998), No. 3.