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ULTRADIFFERENTIABLE MAPPINGS AND DECOMPOSITION OF ULTRADISTRIBUTIONS

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It is well-known that Schwartz distributions with support in the union of two compact subsets of R^n can not be written as the sum of two Schwartz distributions with supports in each compact subset. But S. Lojasiewicz gave a necessary and sufficient geometric condition that such a decomposition can be performed.

In this thesis, first, we show that an ultradistribution also does not have the decomposition property as mentioned above and the sheaf of ultradistributions is not flabby.

Secondarily, we give a necessary and sufficient geometric condition that the decomposition of ultradistribution is possible as Schwartz distribtion.

On the other hand, we show that the ultradifferentiability of mappings is stable under the ultradifferentiable coordinate changes. Lastly we give various characterizations of ultradistributions with compact support.

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