POINTWISE REGULARITY AND MULTIFRACTAL ANALYSIS ON LIE GROUPS

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Multifractal analysis is a very recent branch of mathematics studying the pointwise behavior of a locally bounded function to determine its Holder exponent and it monofractal or multifractal nature. It has already been widely studied for functions defined in the Euclidean space, with still a lot of unanswered questions. However, very few was done in a more general context. For example, it could be useful to define such concepts on some manifolds.

In this talk, we will extend the concept of pointwise, local and uniform Holder spaces in a unified way to the case of unimodular Lie groups and give a few characterizations of these spaces. We will also briefly compare these notions with what was already done in this framework. A particular attention will be given to compact Lie groups where a generalization of the Weierstrass continuous nowhere differentiable function can be defined.