SEMINARIO

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On the construction of large algebras not contained in the image of the Borel map

Abstract: The Borel map takes germs at 0 of smooth functions to the sequence of iterated partial derivatives at 0. It is well known that the restriction of this map to the germs of quasianalytic ultradifferentiable classes which are strictly containing the real analytic functions can never be onto the corresponding sequence space. In a recent paper we have already studied the size of the image of the Borel map by using different approaches and worked in the general setting of quasianalytic ultradifferentiable classes defined by weight matrices. The aim is now to show that the image is also small with respect to the notion of algebrability and we treat both the Cauchy product (convolution) and the pointwise product. In particular, a deep study of the stability of the considered spaces under the pointwise product is developed.

This is joint work with Céline Esser from the Université de Liège (Belgium).

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