Optimal flat functions in Carleman-Roumieu ultraholomorphic classes in sectors

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Joint work with J. Jiménez-Garrido, J. Sanz and G. Schindl.

A general procedure is presented in order to obtain linear continuous extension operators, right inverses of the Borel map, whenever optimal flat functions are available in Carleman-Roumieu ultraholomorphic classes, defined on sectors and in terms of regular weight sequences in the sense of Dyn'kin. For a family of regular sequences, including the well-known q-Gevrey case, we construct such optimal flat functions in arbitrary sectors of the Riemann surface of the logarithm.

Only very recently we have been able to construct optimal flat functions in Carleman-Roumieu ultraholomorphic classes for general weight sequences $\mathbb{M}$ (not even regular) and in sectors whose opening is limited in terms of the index $\gamma(\mathbb{M})$ of V. Thilliez. This step forward is due to the equivalence between the classical conditions $(M3)$ of H. Komatsu and a condition appearing in a work of M. Langenbruch which has been recovered in a preprint of D. N. Nenning, A. Rainer and G. Schindl.