THE BOREL MAP IN THE MIXED BEURLING SETTING

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The Borel map $j_0^\infty : C^\infty(\mathbb{R}) \to \mathbb{C}^\mathbb{N}$ assigns to a smooth function its sequence of derivatives (at 0). It is a classical result, that the Borel map is surjective in this setting. Analogous questions for ultradifferentiable classes defined via weight sequences and weight functions have been studied extensively in the last decades. More precisely it was characterized, in terms of the defining weights, when the image of the Borel map covers a sequence space defined via the same weight structure. We give new characterizations for Beurling-type classes defined via weight matrices and recover classical results for weight sequences and weight functions as special cases.

This is joint work with Armin Rainer and Gerhard Schindl.