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Unboundedness properties on generalised Morrey and Besov-Morrey spaces

In this talk we explore unboundedness properties of functions belonging to generalised Morrey spaces, denoted by $\mathcal{M}_{\varphi,p}(\mathbb{R}^d)$, and related Besov-Morrey spaces by means of the study of their growth envelopes. This concept has proven successful in a variety of smoothness spaces already. Interestingly, for generalised Morrey spaces we discover only three distinct possibilities: boundedness, L_p-behaviour, or the proper Morrey behaviour. These cases are precisely characterised by the limits of certain functions involving the function φ, p and d at zero and at infinity.

This is based on a joint work with Dorothee D. Haroske (Jena) and Leszek Skrzypczak (Poznań).