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The embeddings of Jawerth and Franke for Besov and Triebel-Lizorkin spaces with variable exponents

This talk is based on a joint work with H. Kempka and J. Vybíral. Embeddings of Jawerth and Franke for the scale of Besov and Triebel-Lizorkin spaces with variable exponents

$$F_{p_0(\cdot),q(\cdot)}^{s_0(\cdot)}(\mathbb{R}^n) \hookrightarrow B_{p_1(\cdot),p_0(\cdot)}^{s_1(\cdot)}(\mathbb{R}^n) \quad \text{and} \quad B_{p_0(\cdot),p_1(\cdot)}^{s_0(\cdot)}(\mathbb{R}^n) \hookrightarrow F_{p_1(\cdot),q(\cdot)}^{s_1(\cdot)}(\mathbb{R}^n),$$

respectively, for $\inf_{x \in \mathbb{R}^n} (s_0(x) - s_1(x))$ and

$$s_0(x) - \frac{n}{p_0(x)} = s_1(x) - \frac{n}{p_1(x)}, \quad x \in \mathbb{R}^n,$$

will be presented. Unlike the constant exponent case, we deal with this problem totally avoiding the use of interpolation and duality arguments.

References.

- [1] H. F. Gonçalves, H. Kempka, J. Vybíral, Franke-Jawerth embeddings for Besov and Triebel-Lizorkin spaces with variable exponents. To appear in *Ann. Acad. Sci. Fenn. Math.*.