

# Embeddings of generalised Morrey smoothness spaces

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**Abstract.** In this talk, we study the embeddings between generalised Triebel-Lizorkin-Morrey spaces  $\mathcal{E}_{\varphi,p,q}^s(\mathbb{R}^d)$ . Some embeddings within the scales of further generalised Morrey smoothness spaces like  $\mathcal{N}_{\varphi,p,q}^s(\mathbb{R}^d)$ ,  $B_{p,q}^{s,\varphi}(\mathbb{R}^d)$  and  $F_{p,q}^{s,\varphi}(\mathbb{R}^d)$  are also included. Our approach requires a wavelet characterisation of those spaces which we establish for the system of Daubechies' wavelets. Then we prove necessary and sufficient conditions for the embedding  $\mathcal{E}_{\varphi_1,p_1,q_1}^{s_1}(\mathbb{R}^d) \hookrightarrow \mathcal{E}_{\varphi_2,p_2,q_2}^{s_2}(\mathbb{R}^d)$  in two cases ( $p_1 \geq p_2$  and  $p_1 < p_2$ ) and via a new parameter  $r_\varphi$ . Some corollaries and an almost final answer to characterise the embedding  $\mathcal{E}_{\varphi,p,q}^s(\mathbb{R}^d) \hookrightarrow C(\mathbb{R}^d)$  are also in the talk.

This is joint work with Dorothee D. Haroske, Susana D. Moura and Leszek Skrzypczak.