

Optimal Sobolev embeddings and interpolation with boundary conditions for a class of weighted function spaces

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For a class of fractional order Sobolev/Slobodetskii spaces with weights of type $w(x) = |x|^\gamma$ we present optimal Sobolev embeddings. We further describe the complex interpolation spaces between $L^p(w)$ and weighted Sobolev spaces with boundary conditions. This extends a classical result of R. Seeley to the weighted situation. The abstract results are used to determine the temporal trace for weighted anisotropic Sobolev spaces arising in the context of maximal regularity for stochastic PDEs.

This is joint work with Mark Veraar (Delft).