

The use of entropy in function spaces and spectral theory

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In this talk we wish to describe the symbiotic relationship between entropy numbers, function spaces, and the spectral theory of some partial differential operators. For this purpose we concentrate on the following topics:

1. Riesz theory in quasi-Banach spaces, relations to entropy numbers,
2. Function spaces of Sobolev-Besov type on bounded domains and their compact embeddings,
3. Wavelet isomorphisms and sequence spaces as a decisive tool,
4. Spectral theory of some (degenerate) elliptic differential operators,
5. Further possibilities.