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★**Local function spaces, heat and Navier-Stokes equations.**

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The book is addressed to graduate students and mathematicians having a working knowledge of basic elements of global functions and who are interested in applications to nonlinear PDEs with heat Navier-Stokes equations.

The author presents a new approach to exhibit relations between Sobolev spaces, Besov spaces and Hölder-Zygmund spaces on the one hand, and Morrey-Campanato spaces on the other.

Morrey-Campanato spaces extend the notion of functions of bounded mean oscillation. These spaces play an important role in the theory of linear and nonlinear PDEs.

In the first three chapters local smoothness spaces in Euclidean n -space, based on Morrey-Campanato refinement of Lebesgue spaces, are considered. The approach of the author relies on wavelet decompositions. This is applied in the next chapter to Gagliardo-Nirenberg inequalities. In chapter 5, linear and nonlinear heat equations in global and local function spaces are studied. The obtained properties about function spaces and nonlinear heat equations are used in the next chapter to study Navier-Stokes equations.

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