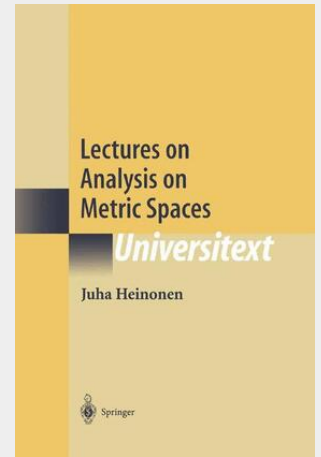


## Lectures on Analysis on Metric Spaces

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Analysis in spaces with no a priori smooth structure has progressed to include concepts from the first order calculus. In particular, there have been important advances in understanding the infinitesimal versus global behavior of Lipschitz functions and quasiconformal mappings in rather general settings; abstract Sobolev space theories have been instrumental in this development. The purpose of this book is to communicate some of the recent work in the area while preparing the reader to study more substantial, related articles. The material can be roughly divided into three different types: classical, standard but sometimes with a new twist, and recent. The author first studies basic covering theorems and their applications to analysis in metric measure spaces. This is followed by a discussion on Sobolev spaces emphasizing principles that are valid in larger contexts. The last few sections of the book present a basic theory of quasisymmetric maps between metric spaces. Much of the material is relatively recent and appears for the first time in book format. There are plenty of exercises. The book is well suited for self-study, or as a text in a graduate course or seminar. The material is relevant to anyone who is interested in analysis and geometry in nonsmooth settings.

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