HAPPY FRACTALS AND SOME ASPECTS OF ANALYSIS ON METRIC SPACES

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Dedicated to Leon Ehrenpreis and Mitchell Taibleson

Abstract

There has been a lot of interest and activity along the general lines of “analysis on metric spaces” recently, as in [2], [3], [26], [40], [41], [46], [48], [49], [51], [82], [83], [89], for instance. Of course this is closely related to and involves ideas concerning “spaces of homogeneous type”, as in [18], [19], [66], [67], [92], as well as sub-Riemannian spaces, e.g., [8], [9], [34], [47], [52], [53], [54], [55], [68], [70], [72], [73], [84], [86], [88]. In the present survey we try to give an introduction to some themes in this general area, with selections related to several points of view. Let us also mention [39], [93], [97], [98], [99] for topics dealing with nonstandard analysis, where one might think of a continuous metric space as something like a nonstandard graph.

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