

<<非光滑分析和控制论>>

图书基本信息

书名：<<非光滑分析和控制论>>

13位ISBN编号：9787506292658

10位ISBN编号：7506292653

出版时间：2009-1

出版时间：世界图书出版公司

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页数：276

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前言

Pardon me for writing such a long letter; I had not the time to write a short one. ——Lord Chesterfield

Nonsmooth analysis refers to differential analysis in the absence of differentiability. It can be regarded as a subfield of that vast subject known as nonlinear analysis. While nonsmooth analysis has classical roots (we claim to have traced its lineage back to Dini), it is only in the last decades that the subject has grown rapidly. To the point, in fact, that further development has sometimes appeared in danger of being stymied, due to the plethora of definitions and unclearly related theories. One reason for the growth of the subject has been, without a doubt, the recognition that nondifferentiable phenomena are more widespread, and play a more important role, than had been thought. Philosophically at least, this is in keeping with the coming to the fore of several other types of irregular and nonlinear behavior: catastrophes, fractals, and chaos. In recent years, nonsmooth analysis has come to play a role in functional analysis, optimization, optimal design, mechanics and plasticity, differential equations (as in the theory of viscosity solutions), control theory, and, increasingly, in analysis generally (critical point theory, inequalities, fixed point theory, variational methods...). In the long run, we expect its methods and basic constructs to be viewed as a natural part of differential analysis.

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内容概要

Nonsmooth analysis refers to differential analysis in the absence of differentiability. It can be regarded as a subfield of that vast subject known as nonlinear analysis. While nonsmooth analysis has classical roots (we claim to have traced its lineage back to Dini), it is only in the last decades that the subject has grown rapidly. To the point, in fact, that further development has sometimes appeared in danger of being stymied, due to the plethora of definitions and unclearly related theories.

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