

<<微分方程动态系统和混沌导论>>

图书基本信息

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内容概要

30年来,动力系统的数学理论与应用有了很大发展。

30多年前还没有高速的台式计算机和计算机图像,“混沌”一词也没有在数学界使用,而对于微分方程与动力系统的研究兴趣主要仅限于数学界中比较小的范围。

到今天,处处有计算机,求微分方程近似解的软件包已得到广泛运用,使人们从图形中就能看到结果。

对于非线性微分方程的分析已为广大学者所接受,一些复杂的动力学行为,如马蹄映射、同宿轨、Lorenz系统中揭示出来的复杂现象,以及数学方面的分析,使学者们确信简单的稳定运动,如平衡态和周期解已不总是微分方程解的最重要的行为,而混沌现象揭示出来的美妙性态正促使各个领域的科学家与工程师细心关注在他们自己领域中提出的重要的微分方程及其混沌特性。

动力系统现象在今天已出现在几乎每个科学领域中,从化学中的振荡Belousov-Zhabotinsky反应到电子工程中的混沌Chua电路,从天体力学中的复杂运动到生态系统中的分岔。

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编辑推荐

《微分方程动态系统和混沌导论》这次修订本新增加一名作者，即著名的混沌理论专家德瓦尼（R.Devaney），内容也有很大改动。

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