



# 2025 年数理经济学笔记

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声明: 请勿用于个人学习外其他用途!



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# 第 1 章 Multi-Variable Calculus<sup>1</sup>

## Keywords

□ gradient 梯度

## 1.1 introduction

### 1.1.1 Motivation and Insight

- Many practical problems involve optimization with multiple variables.
- Real-world applications often require optimizing several variables simultaneously.
- Linear functions are easy to understand and manipulate.
  - Not all interesting functions are linear, but many can be approximated by linear functions.
  - The gradient is a generalization of the derivative to functions of multiple variables.

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<sup>1</sup>多元微分还能有不会的吗, 这真不用记了吧