



Wolfgang W. Osterhage

# Mathematical Theory of Advanced Computing

- Presents several new approaches on computer performance
- Provides valuable informations about efficiency and accuracy in scientific calculations
- Deals with the opportunities of a Neural Relational Data Base Management System
- Discusses the performance potential of quantum computers

This book deals with computer performance by addressing basic preconditions. Besides general considerations about performance, several new approaches are presented. One of them targets memory structures by introducing the possibility of overlapping non-interfering (virtual) address spaces. This approach is based on a newly developed jump transformation between different symbol spaces. Another approach deals with efficiency and accuracy in scientific calculations. Finally the concept of a Neural Relational Data Base Management System is introduced and the performance potential of quantum computers assessed.

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