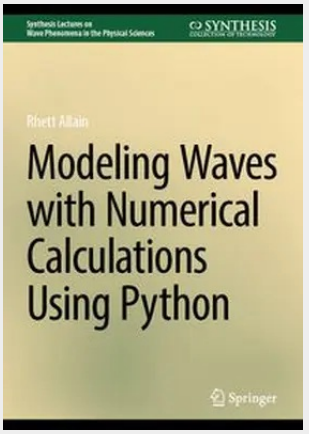
Allain

Modeling Waves with Numerical Calculations Using Python

Numerical calculations (what many call computational physics) is a core tool in modern physics. With numerical methods it's possible to solve problems that would otherwise be impossible. Most physics students and educators have at least some exposure to the wave equation. It shows up in many different contexts—light, quantum mechanics, and even a simple wave on a string. However, it can be difficult to come up with non-trivial solutions to the wave equation. This text goes through the techniques to create a numerical model of the wave equation starting from the very basics and using free and open source tools such as Python and Web VPython.

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53,49 €
49,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783031782909
Medium: Buch
ISBN: 978-3-031-78290-9
Verlag: Springer Nature Switzerland
Erscheinungstermin: 27.11.2024
Sprache(n): Englisch
Auflage: Erscheinungsjahr 2024
Serie: Synthesis Lectures on Wave Phenomena in the Physical Sciences
Produktform: Gebunden
Gewicht: 421 g
Seiten: 118
Format (B x H): 173 x 246 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)