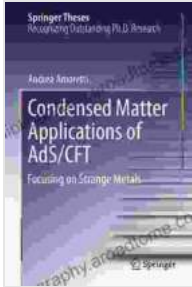


# Condensed Matter Applications of AdS/CFT: A Comprehensive Guide for Students and Researchers



## Condensed Matter Applications of AdS/CFT: Focusing on Strange Metals (Springer Theses) by Elliot Williams

★★★★☆ 4.7 out of 5

Language : English  
File size : 11264 KB  
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Enhanced typesetting : Enabled  
Print length : 219 pages



The Anti-de Sitter/Conformal Field Theory (AdS/CFT) correspondence is a remarkable theoretical framework that has revolutionized our understanding of the relationship between gravity and quantum field theory. It has also opened up new avenues for exploring the physics of strongly-correlated materials, which are at the heart of many condensed matter phenomena.

This comprehensive guide provides an in-depth exploration of the theoretical foundation and practical applications of AdS/CFT in condensed matter physics. It is written for students and researchers who want to learn more about this exciting and rapidly developing field.

## Theoretical Framework

The AdS/CFT correspondence is based on the idea that a certain type of gravitational theory in a higher-dimensional spacetime (AdS) is equivalent to a conformal field theory (CFT) living on the boundary of that spacetime. This duality has profound implications for our understanding of gravity and quantum field theory.

In the context of condensed matter physics, the AdS/CFT correspondence can be used to study a wide range of phenomena, including superconductivity, superfluidity, and magnetism. By mapping these phenomena to a higher-dimensional gravitational theory, we can gain new insights into their underlying physics.

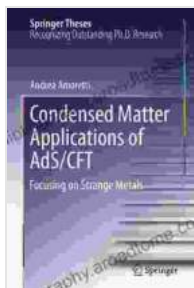
## **Practical Applications**

The AdS/CFT correspondence has also led to a number of important practical applications in condensed matter physics. For example, it has been used to develop new methods for calculating the properties of strongly-correlated materials. It has also been used to design new materials with tailored properties.

In this guide, we will explore a variety of practical applications of AdS/CFT in condensed matter physics. We will also discuss the challenges and opportunities that lie ahead for this exciting field.

The AdS/CFT correspondence is a powerful theoretical framework that has revolutionized our understanding of gravity and quantum field theory. It has also opened up new avenues for exploring the physics of strongly-correlated materials. This comprehensive guide provides an in-depth exploration of the theoretical foundation and practical applications of AdS/CFT in condensed matter physics. It is written for students and

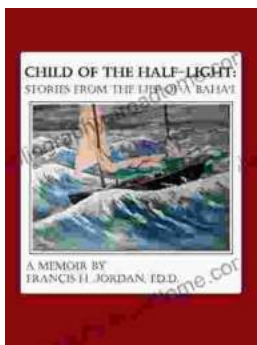
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