

Asymptotic Safety and Black Holes (Springer Theses)

Kevin Falls

One of the open challenges in fundamental physics is to combine Einstein's theory of general relativity with the principles of quantum mechanics. In this thesis, the question is raised whether metric quantum gravity could be fundamental in the spirit of Steven Weinberg's seminal asymptotic safety conjecture, and if so, what are the consequences for the physics of small, possibly Planck-size black holes? To address the first question, new techniques are provided which allow, for the first time, a self-consistent study of high-order polynomial actions including up to 34 powers in the Ricci scalar. These novel insights are then exploited to explain quantum gravity effects in black holes, including their horizon and causal structure, conformal scaling, evaporation, and the thermodynamics of quantum space-time. Results indicate upper limits on black hole temperature, and the existence of small black holes based on asymptotic safety for gravity and thermodynamical arguments.

- [Janice Vanleave's Gravity \(Spectacular Science Projects\)](#)
- [Brane-localized Gravity](#)
- [The Schrödinger-Virasoro Algebra: Mathematical structure and dynamical Schrödinger symmetries \(Theoretical and Mathematical Physics\)](#)
- [Current Topics in Astrofundamental Physics: The Cosmic Microwave Background \(Nato Science Series C:\)](#)
- [Frontiers of Fundamental and Computational Physics: 9th International Symposium \(AIP Conference Proceedings / Astronomy and Astrophysics\)](#)
- [Theoretical High Energy Physics: MRST 2001: A Tribute to Roger Migneron, London, Ontario, Canada, 15-18 May 2001 \(AIP Conference Proceedings\)](#)
- [Dimensional Reduction of Gauge Theories, Spontaneous Compactification and Model Building \(Lecture Notes in Physics\)](#)
- [11th Conference on Recent Developments in Gravity 2004 \(Journal of Physics: Conference Series\)](#)
- [Basic Relativity: An Introductory Essay \(SpringerBriefs in Physics\)](#)
- [Generation of Cosmological Large-Scale Structure \(Nato Science Series C:\) \(Volume 503\)](#)
- [Topics in Theoretical and Experimental Gravitation Physics \(Nato Science Series B:\)](#)
- [Space and Time in Contemporary Physics, an Introduction to the Theory of Relativity and Gravitation - Primary Source Edition](#)
- [Advances in the Interplay Between Quantum and Gravity Physics \(Nato Science Series II:\)](#)
- [Living and Working in Space: A History of Skylab NASA SP-4208](#)
- [How Do We Stay on Earth?: A Gravity Mystery \(First Graphics: Science Mysteries\)](#)
- [Der Kampf um den verlorenen Tag: Eine Geschichte aus der Renaissance \(German Edition\)](#)
- [The Conservation of Gravity and Heat](#)
- [Lean Six Sigma for Service: How to Use Lean Speed and Six Sigma Quality to Improve Services and Transactions](#)
- [Mathematica for Theoretical Physics: Classical Mechanics and Nonlinear Dynamics](#)
- [Real Time and Unification Through 4D Chaos: A Redefinition of Time and the Universe's Structure, Unifying the 4 Dimensions, the Fundamental Forces and ... and the Origins of the Universe and Matter](#)

Asymptotic Safety and Black Holes (Springer Theses) Summary Details

Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls ebook read online.

This Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls book is simply not ordinary book, you have after that it the world is in your hands. The benefit you will get by reading this book is usually information inside this e-book incredible fresh, you will get information which is getting deeper an individual read a lot of information you will get. This kind of Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls without we recognize teach the one who studying it become critical in imagining and analyzing. Don't become worry Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls can bring whenever you are and not make your carrier space or bookshelves' become full because you can have it within your lovely laptop even telephone. This Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls having great arrangement in word as well as layout, so you will not sense uninterested in reading.

Editorial

The book Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls has a lot info on it. So when you check out this book you can get a lot of advantage. The book was published by the very famous author. This articles author makes some research ahead of write this book. This book very easy to read you may get the point easily after looking over this book. The book Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls can give more knowledge and information about everything you want. So just why must we leave the good thing like a book Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls? Some of you have a different opinion about book. But one aim that will book can give many details for us. It is absolutely suitable. Right now, try to closer with the book. Knowledge or facts that you take for that, it is possible to give for each other; you could share all of these. Book Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls has simple shape nevertheless, you know: it has great and large function for you. You can seem the enormous world by available and read a book. So it is very wonderful. Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls

Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls epub PDF read Online Download.

Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls Reader Review Online

One of the open challenges in fundamental physics is to combine Einstein's theory of general relativity with the principles of quantum mechanics. In this thesis, the question is raised whether metric quantum gravity could be fundamental in the spirit of Steven Weinberg's seminal asymptotic safety conjecture, and if so, what are the consequences for the physics of small, possibly Planck-size black holes? To address the first question, new techniques are provided which allow, for the first time, a self-consistent study of high-order polynomial actions including up to 34 powers in the Ricci scalar. These novel insights are then exploited to explain quantum gravity effects in black holes, including their horizon and causal structure, conformal scaling, evaporation, and the thermodynamics of quantum space-time. Results indicate upper limits on black hole temperature, and the existence of small black holes based on asymptotic safety for gravity and thermodynamical arguments. **Asymptotic Safety and Black Holes (Springer Theses) by Kevin Falls ebook PDF online**