

**NITheCS FOCUS AREA:
PUBLIC TALK**

NITheCS
National Institute for
Theoretical and Computational Sciences



Celebrating a Centenary of the Schrödinger Equation and Quantum Theory

A/Prof Will Horowitz (University of Cape Town) and Prof Kevin Goldstein (University of the Witwatersrand)

Thursday, 17 July 2025 | 16h00-17h30 SAST
Venues: Neelsie Cinema, Stellenbosch University, & Online

Join us for a special public talk marking 100 years since one of physics' most profound breakthroughs. Two distinguished speakers will share insights inspired by the enduring legacy of quantum mechanics:

The Physics of a Trillion Degrees

A/Prof Will Horowitz (UCT)

ABSTRACT

A microsecond after the Big Bang, all of space existed at a trillion degrees, one hundred thousand times hotter than the centre of the sun. Some 13.8 billion years later, massive collaborations of thousands of scientists recreate these conditions of the early universe thousands of times a second in one of the most expensive and complicated science experiments ever attempted. In this talk I provide a general introduction to the physics explored in these Little Bangs, ephemeral fireballs that – during their lifetimes of less than a billionth of a trillionth of a second – are droplets of the hottest, most perfect fluid in the universe.

BIOGRAPHY



Will Horowitz received his PhD in Physics from Columbia University in 2008. After a postdoctoral position at Ohio State University, Prof Horowitz moved to the University of Cape Town in 2010. Since then, he has won the UCT College of Fellows Young Researcher Award, Royal Society of South Africa's Meiring Naudé Medal for Outstanding Early Career Contributions to Science, and South Africa's Claude Leon Merit Award for Early-Career Researchers. His research interests lie in high-energy quantum chromodynamics, quantum field theories more generally, and the application of string theory to high-energy nuclear collisions.

What is Quantum Mechanics and Why Should We Care?

Prof Kevin Goldstein (WITS)

ABSTRACT

'Quantum mechanics' is all around but what is it and how does it affect us? In this talk, I will discuss the essential nature of quantum mechanics, its role in our current and future technology and tensions at the heart of theoretical physics. Our journey will move from the stability of the atom to the enigmatic nature of black holes.

BIOGRAPHY



Born and raised in Johannesburg, Kevin Goldstein studied physics at the University of Cape Town and later at Brown University in the USA. He completed postdoctoral fellowships at the Tata Institute of Fundamental Research (TIFR) in Mumbai, India, and at Utrecht University in the Netherlands, before returning to Johannesburg, where he is now a professor at the University of the Witwatersrand. His research interests lie in high-energy physics, string theory, and black holes.

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