



# NITheCS

National Institute for  
Theoretical and Computational Sciences

## COLLOQUIUM

# The Physics of a Trillion Degrees

A/Prof Will Horowitz (University of Cape Town)

**DATE:** Monday, 31 March 2025 | 16h00–17h00 SAST

**VENUES:**

- Neelsie Cinema, Stellenbosch University
- Online

--- A recording of the talk will be published on the NITheCS YouTube channel afterwards ---

### 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. 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.

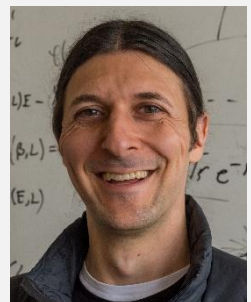
### BIOGRAPHY

Will Horowitz received his PhD in Physics from Columbia University in 2008. After a postdoctoral position at the Ohio State University, Prof Horowitz moved to the University of Cape Town (UCT) in 2010.

Since arriving at UCT, Prof Horowitz has won the UCT College of Fellows Young Researcher Award, the 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.

Prof Horowitz founded the Society of Physics Students in the UCT Physics Department; established the SA-CERN Excellence Bursaries; is the NITheCS Head of Node for the Western Cape; and created and directs the South African Theory and Computational School (SATACS) within NITheCS. SATACS is the first semi-virtual postgraduate-level teaching platform in Physics and Mathematics in South Africa.

Prof Horowitz's research interests lie in high-energy quantum chromodynamics, quantum field theories more generally, and the application of string theory to high-energy nuclear collisions.



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