



The Life and Legacy of Emmy Noether: *The Forgotten Architect of Modern Physics*

Dhiya Dharampal (Stellenbosch University) & Raphael De Sousa (NITheCS)

Monday, 6 July 2026 | 16h00–17h00 SAST

HOW TO ATTEND:

In person (main venue):

- Road House Cinema (Neelsie) Stellenbosch University

Watch at a satellite venue:

- Seminar Room K310 Physics Building G5 North-West University

Online (live stream)

--- Please note, a recording of the lecture will be published on the NITheCS YouTube channel following the event ---

ABSTRACT

Emmy Noether's life is a remarkable story of resilience and determination. Despite facing decades of exclusion and discrimination, she transformed mathematics and theoretical physics, laying the foundations for much of modern science, yet her name remains far less well known than her achievements deserve.

Combining history, mathematics and physics, this talk explores Noether's extraordinary life, the challenges she overcame, and the groundbreaking work that changed our understanding of the universe. We revisit the early 20th century, when Einstein and Hilbert were developing General Relativity and physicists were grappling with the problem of energy conservation.

Noether's solution revealed the profound connection between symmetries and the conservation laws of physics. Her theorems not only resolved fundamental issues in General Relativity but also established symmetry as a central principle of nature, paving the way for the Standard Model and modern particle physics.

More than a century later, Noether's ideas continue to shape contemporary physics. This talk celebrates her enduring legacy and highlights the lasting impact of one of history's greatest, yet most overlooked, mathematicians.

SPEAKER BIOGRAPHIES



Dhiya is a Master's student at Stellenbosch University under the supervision of Prof Francesco Petruccione and Prof Ilya Sinayskiy. Her research is situated at the intersection of quantum computing, machine learning and medicine, with a focus on the automated design of quantum machine learning algorithms in medical image processing. She holds a BSc (M Stream) majoring in Astronomy and Physics, as well as an Honours degree in Physics, both conferred by the University of KwaZulu-Natal.



Raphael is currently an intern at NITheCS and an incoming PhD student at the University of Oxford and a Rhodes Scholarship Scholar-elect for 2026. His research focuses on mathematical methods in theoretical physics, particularly quantum field theory. He recently completed his Honours degree in Physics at University of Cape Town under the supervision of Heribert Weigert, following a triple major in Physics, Mathematics, and Applied Mathematics.



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