Dresden University of Technology

Faculty of Physics

PHYSICS COLLOQUIUM

Speaker: **Prof. Claude Monney**
Professor,
Neural Network Dynamics and Computation,
Universität Bonn

Topic: **A basic computational model of humankind's marginalization by AI**

Time and place: Tuesday, January 12, 2026, **2:50 pm** – hybrid event
The colloquium will be held in REC/C213.
Online participation possible:
Zoom-Meeting: Meeting-ID: 642 8554 1414 / passcode: w8$nSJjy
https://tu-dresden.zoom-x.de/j/64285541414?pwd=6UOwTkSBlWvNv16PgF2K1qZtoUC8cS.1

Host: Prof. Marc Timme

Abstract: The recent, rapid surge of artificial intelligence (AI) capabilities has raised concerns about the safety of this development. In particular, it has been suggested that it may ultimately lead to the domination and marginalization of humankind by AI. Here, we employ dynamical systems and game theory methodology to develop a basic computational model of future humankind-AI interactions, which accounts for farsightedness, plausible objectives and shared resources of the agents. We observe marginalization of humankind due to AIs that evolve as under evolutionary pressure by others. The model indicates a specific time course: after a few years of unprecedented richness in resources and progress, there is a complete deduction of resources from humankind. This happens dramatically suddenly and shortly before the AI singularity, where AI's efficacy becomes extremely large. Humankind is at this point aware of the danger for several years, but has only been able to delay the process. Marginalization can be averted by planning sufficiently long ahead and restricting resources early, which prevents strong AI growth including the singularity. This implicates sacrificing huge but transient benefits.

Bio: Raoul-Martin Memmesheimer studied theoretical physics in Kaiserslautern, Munich and Jena, and received his diploma in 2004. He then conducted research in theoretical physics of neural networks at the Max Planck Institute for Dynamics and Self-Organization in Göttingen, in the group of M. Timme and in the department of T. Geisel, receiving his PhD in 2007. He continued his research at Harvard University, Radboud University Nijmegen, Columbia University and the FIAS Frankfurt, working with H. Sompolinsky, H.J. Kappen, S. Gielen, P. Tiesinga, L. Abbott, and many others. Since 2017 he has been professor at the University of Bonn.

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