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PHYSIKALISCHES KOLLOQUIUM

UNIVERSITÄT DES SAARLANDES

Lecture in honour of this year's Nobel Prize in Physics

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Universität des Saarlandes | Forschungszentrum Jülich

Quanta in electric circuits - how a foundational question sparked the quantum industry

Thursday, 13.11.2025, at 2.00 p.m. **c. t.**
Building C6.4, Lecture Hall II (00.9)

The experiments honored by this years' Nobel prize went after a foundational question - is there a size limit to the possibility to create quantum superpositions? They showed that in some electric circuits, the collective behavior that describes about 10 billion elementary particles behaves as if it was a single quantum mechanical degree of freedom with no limit in sight. Decades later, these circuits form one of the most promising platforms for the implementation of quantum computers and we teach the results in undergraduate classes. I will describe what they have actually shown and how painstakingly they ruled out other, simpler explanations. I will describe the foundational debate around the topic and a modern view on it. I will also, from my own experience, highlight how the combination of these three complementary personalities was important to pull off this historic achievement.

You can participate online via MS Teams: https://l1nk.dev/siB04

Interested people are cordially invited.

Coffee and cookies are served at 2.00 p.m. in front of the Lecture Hall

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