Einladung zum hochschulöffentlichen Vortrag von
Dr. Ioan Pop

am Di, 24.05.2022
um 14:00 Uhr
in Raum 2.136, Pfaffenwaldring 57, 70569 Stuttgart
und online via Webex:
https://unistuttgart.webex.com/unistuttgart/j.php?MTID=mceaa3c7ac73819ba66b421885ff8cd0b

High Impedance Quantum Circuits

High impedance quantum circuits hold great potential for protected quantum bits and in general for coherent elements required for superconducting quantum processors. To reach the high impedance regime, we use granular Aluminum (grAl), a disordered superconductor which can be understood as a self-assembled Josephson junction array [1,2]. One illustration of grAl's utility in quantum circuit design is the remarkable resilience of grAl fluxonium qubits [3] to photons populating its dispersively coupled readout resonator. This resilience allows single shot QND measurements [4] and quantum state preparation via active feedback with fidelity exceeding 90% even without using a parametric amplifier [5]. An outstanding challenge is the mitigation of quasiparticle bursts [6] and two level systems in its environment [7].