Sonderforschungsbereich 1277

Emergent Relativistic Effects in Condensed Matter -
From Fundamental Aspects to Electronic Functionality

SFB – Colloquium

Speaker: **Dr. Leandro Tosi**
Centro Atomico Bariloche, Argentina

Date: Thursday, 24 February 2022, 14:15,
H34 and via Zoom

Topic: Hybrid quantum circuits: from artificial atoms to fermionic spins

Abstract:

From the first demonstrations of coherent manipulation of the states of quantum circuits twenty years ago, the research on superconducting qubits has grown to a mature and exciting field. The ideas borrowed to nuclear magnetic resonance and atomic physics, in particular to the study of atoms in cavities, lead to the development of circuit QED, where artificial atoms interact with the photons of microwave resonators. In this overview talk, I will introduce some key ideas which are now implemented in hybrid quantum circuits to study a variety of degrees of freedoms: phonons in mechanical resonators, spin ensembles and very recently the spin of fermionic quasiparticles.

Host: Prof. Dr. Christoph Strunk