

### Day 3 (Poster E)

Maria Hita Perez, Instituto de Fisica Fundamental (Consejo Superior de Investigaciones Cientificas, CSIC)

Title: 3-JOSEPHSON JUNCTION FLUX QUBIT COUPLINGS AND NON-STOQUASTICITY

#### Abstract:

In this poster we will present the recent results of our current work on flux qubits couplings. For this investigation, we consider a broad range of different possibilities for coupling two 3-Josephson junctions using capacitors and Josephson junctions. We perform a complete study, numerical and analytical, of these couplings hoping to provide results that might be useful for later research on quantum computing and simulation. In particular, the purpose of this work is to determine whether a non-stoquatic Hamiltonian can be obtained from such systems and study the possibility of simulating arbitrary XXZZ Ising models to perform adiabatic quantum computation.