Josephson current through a molecular transistor in a dissipative environment

TOMAS NOVOTNY, ALESSANDRA ROSSINI, KARSTEN FLENSBERG, Nano-Science Center, University of Copenhagen, Denmark, THEORY GROUP TEAM — We study the Josephson coupling between two superconductors through a single correlated molecular level, including Coulomb interaction on the level and coupling to a bosonic environment. All calculations are done to the lowest, i.e., the fourth, order in the tunneling coupling and we find a suppression of the supercurrent due to the combined effect of the Coulomb interaction and the coupling to environmental degrees of freedom. Both analytic and numerical results are presented.