Role of initial quantum correlation in transient linear response
CHIKAKO UCHIYAMA, Univ. of Yamanashi, Japan, MASAKI AIHARA, Nara Institute of Science and Technology, Japan — We study the transient linear response of a two-level system coupled with an environmental system for correlated and factorized initial conditions. We find the significant differences between the transient linear response in these cases, especially for strong system-environment interaction at intermediate temperatures. This means that we need to pay attention to the initial conditions when we analyze experiments on transient linear response. This is because the conventional factorized initial condition, in which the system-environment correlation is disregarded, results in an incorrect response.