Time-local Non-Markovian Quantum Jumps with a Noise-Induced Coherent System[1] MOOCHAN KIM, SHEN-WEN LI, MARLAN SCULLY, Texas AM University — One of a fascinating way to describe the Quantum Mechanical Process is by the Quantum Jump [PRL 68, 580 (1992); RMP 70, 101 (1998)]. When the Agarwal-Fano coupling, known as a noise-induced interference [Agarwal's Quantum Statistical Theories], is involved in the system, the usual Born-Markovian approximation is not adequate to describe the dynamical behavior. According to Piilo, et al, [PRL 100, 180402 (2008)] this Quantum Jump method can be extended to include this non-Markovian dynamics. Here, we clarify the origin of negative population of the usual Markovian treatment for Agarwal-Fano coupling, and present the results using non-Markovian Quantum Jumps and compare them with those from the non-Markovian master equation.

[1]Time-local Non-Markovian Quantum Jumps with a Noise-Induced Coherent System

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