

THE GREEN-KUBO FORMULA FOR GENERAL MARKOV PROCESSES WITH CONTINUOUS TIME PARAMETER

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Abstract: For general Markov processes, the Green-Kubo formula is shown to be valid under a mild condition. A class of stochastic evolution equations in a separable Hilbert space and three typical infinite systems of locally interacting diffusions on \mathbf{Z}^d (irreversible in most cases) are shown to satisfy the Green-Kubo formula, and the Einstein relations for these stochastic evolution equations are shown explicitly as a corollary. In addition, the diffusion coefficient in statistical dynamics and that in probability are shown to be not equivalent sometimes.