Rate description of Fokker-Planck processes with time-periodic parameters PETER TALKNER, Inst of Physics, University of Augsburg — The large time dynamics of periodically driven Fokker-Planck processes possessing several metastable states is investigated. At weak noise the rare transitions between these metastable states can be represented as a discrete Markov process characterized by time dependent rates. At large times the full Fokker-Planck process is completely specified by the transition probabilities of this discrete process and by two types of functions associated to each metastable state: so-called state specific probability densities and localizing functions. The localizing functions assign to the continuous states of the original Fokker-Planck process probabilities for the metastable states. The state specific probabilities allocate a time dependent probability density of continuous states to each metastable state. We specify these functions by their equations of motion and illustrate and validate the presented theory for a periodically forced bistable Brownian oscillator in a wide range of driving frequencies. P. Talkner, J. Luczka, Phys. Rev. E, 69, 046109 (2004). C. Kim, P. Talkner, E.K. Lee, P. Hanggi, Chem. Phys. (2009), doi:10.1016/j.chemphys.2009.10.027; arXiv:0908.1730.

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