# A $P(\phi)_1$-PROCESS ASSOCIATED TO THE NELSON HAMILTONIAN

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ABSTRACT. The Nelson model describes a quantum particle coupled to a scalar bose field. In this talk, We study a joint stochastic process $(X_t)_{t\in\mathbb{R}} = (Y_t, \xi_t)_{t\in\mathbb{R}}$ between a coordiante process and an Ornstein-Uhlenbeck process. Having a Markov structure, we establish that the process $(X_t)_{t\in\mathbb{R}} = (Y_t, \xi_t)_{t\in\mathbb{R}}$ can be viewed as a $P(\phi)_1$-process which will allow us to prove a rigourous central limit theorem in the Nelson case.