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This paper studies the (random) uniform attractor for a class of non-autonomous stochastic evolution equations driven by a time-periodic forcing and multiplicative fractional noise with Hurst parameter bigger than 1/2. We first establish the existence and uniqueness results for the solution to the considered equation and show that the solution generates a jointly continuous non-autonomous random dynamical system (NRDS). Moreover, we prove the existence of the uniform attractor for this NRDS through stopping time technique. Particularly, a compact uniformly absorbing set is constructed under a smallness condition imposed on the fractional noise.

K : Random uniform attractor; non-autonomous random dynamical system; fractional Brownian motion; fractional derivative.

AMS Subject Classification: 37L55, 60G22, 60H15, 37L25, 35R60

1. I

Ever since the fundamental work of Crauel and Flandoli [10], Flandoli and Schmalfuß [13], Crauel *et al.* [9], the random attractor theory has been a powerful tool to describe the asymptotic dynamics of evolution equations with stochastic perturbations. Due to the stochastic nature of real applications, the attraction of random attractors was defined in a pathwise *pullback* sense, which, however, often implies a *forward* attraction in probability which is called the weak forward attraction by, e.g., Ochs [27].