1173-60-32    **Xiong Wang\*** (`xiongwang@ualberta.ca`), Edmonton, Alberta T6G 2G1, Canada, and **Yaozhong Hu**, Edmonton, Alberta T6G 2G1, Canada. *Intermittency properties for a large class of stochastic PDEs driven by fractional space-time noises.*

In this paper, we study intermittency properties for various stochastic PDEs with varieties of space-time Gaussian noises via matching upper and lower moment bounds of the solution. Due to the absence of the powerful Feynman-Kac formula, the lower moment bounds have been missing for many interesting equations except for the stochastic heat equation. This work introduces and explores the Feynman diagram formula for the moments of the solution and the small ball nondegeneracy for the Green's function to obtain the lower bounds for all moments which match the upper moment bounds. Our upper and lower moments are valid for various interesting equations, including stochastic heat equations, stochastic wave equations, stochastic heat equations with fractional Laplacians, and stochastic diffusions which are both fractional in time and in space. (Received September 19, 2021)