1173-60-209 **Quentin Berger**, **Carsten Chong*** (chc2169@columbia.edu) and **Hubert Lacoin**. *The stochastic heat equation with multiplicative Lévy noise: Existence, Moments, and Intermittency.*

We study the stochastic heat equation (SHE) $\partial_t u = \frac{1}{2}\Delta u + \beta u \xi$ driven by a multiplicative Lévy noise ξ with amplitude $\beta > 0$, in arbitrary dimension $d \geq 1$. We prove the existence of solutions under an optimal condition if $d = 1, 2$ and under a close-to-optimal condition if $d \geq 3$. Under an assumption that is general enough to include stable noises, we further prove that the solution is unique. Next, by establishing tight moment bounds on the multiple Lévy integrals arising in the chaos decomposition of u, we show that the solution has finite pth moments for $p > 0$ whenever the noise does. Finally, for any $p > 0$, we derive upper and lower bounds on the moment Lyapunov exponents of order p of the solution, which are asymptotically sharp in the limit as $\beta \to 0$. One of our most striking findings is that the solution to the SHE exhibits full intermittency for any non-trivial Lévy measure, at any disorder intensity $\beta > 0$, in any dimension $d \geq 1$. (Received September 20, 2021)