1173-60-88 **Nicholas T Eisenberg*** (nickeisenberg@gmail.com) and **Le Chen** (le.chen@auburn.edu).
Interpolating the Stochastic Heat and Wave Equations with Time-independent Noise: Solvability and Exact Asymptotics.

In this article, we study a class of stochastic partial differential equations with fractional differential operators subject to some time-independent multiplicative Gaussian noise. We derive sharp conditions, under which a unique global $L^p(\Omega)$-solution exits for all $p \geq 2$. In this case, we derive exact moment asymptotics following the same strategy in a recent work by Balan *et al* [BCC21]. In the case when there exits only a local solution, we determine the precise deterministic time, T_2, before which a unique $L^2(\Omega)$-solution exits, but after which the series corresponding to the $L^2(\Omega)$ moment of the solution blows up. By properly choosing the parameters, results in this paper interpolate the known results for both stochastic heat and wave equations. (Received September 16, 2021)