

## Statistics and Data Science Seminar

### *Spatial asymptotics for the parabolic Anderson models with generalized time-space Gaussian noise*

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**Abstract:** This work is concerned with the precise spatial asymptotic behavior for the parabolic Anderson equation  $\frac{\partial u}{\partial t}(t, x) = \frac{1}{2}\Delta u(t, x) + V(t, x)u(t, x)$ , with  $u(0, x) = u_0(x)$ , where the homogeneous generalized Gaussian noise  $V(t, x)$  is, among other forms, white or fractional white in time and space. Associated with the Cole-Hopf solution to the KPZ equation, in particular, the precise asymptotic form  $\lim_{R \rightarrow +\infty} (\log R)^{-2/3} \log \max_{|x| \leq R} u(t, x) = \frac{3}{4} \sqrt[3]{\frac{2t}{3}}$  a.s. is obtained for the parabolic Anderson model  $\partial_t u = \frac{1}{2} \partial_{xx}^2 u + \dot{W}u$  with the  $(1 + 1)$ -white noise  $\dot{W}(t, x)$ .

Wednesday, December 2 at 4:00 PM in SEO 636