



## PROBABILITY SEMINAR

# A non-local and non-linear SPDE

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IMPA

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Time: 16:00 Hours

Mini-Auditorium MAT

**Abstract.** In this presentation, we will discuss the existence of a local solution to the equation

$$\partial_t X = -(-\Delta)^{1/2} X - \sinh(\gamma X) + \xi,$$

where  $(-\Delta)^{1/2}$  is the half-laplacian, and  $\xi$  is the space-time white noise. As the solution is not point-wise well-defined function, we will have to define the meaning of  $\sinh(\gamma X)$ . We will also discuss the basic ideas between da Pratto-Debusche approach to non-linear SPDE's and more modern techniques, such as regularity structures. We will also discuss the Schauder estimate problem that appears due to the non-locality aspect of our operator.