



# Seminário de Sistemas Dinâmicos da UFF

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## RANDOM DYNAMICS ON THE REAL LINE

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**Data:** 3 de junho - Sexta-feira

**Hora:** 14h. **Atenção: novo horário !**

**Local:** Sala 407, Bloco H, Campus do Gragoatá.

### Resumo

For a random dynamics on the circle, under some mild assumptions it is well-known that the orbits of different initial points almost surely approach each other, and that they are distributed with respect to the unique stationary measure. (There are many names to be mentioned here, starting with Furstenberg, Antonov, Baxendale, Nalski, Deroin, Navas, and concluding with a recent outstanding result by Dominique Malicet.)

My talk will be devoted to a related question: what happens for the random dynamics on the real line, where, due to its non-compactness, one cannot anymore claim the existence of a stationary measure via the standard Krylov-Bogolubov averaging procedure.

In a work with Bertrand Deroin, Andrés Navas and Kamlesh Parwani, we have studied a symmetric random dynamics on the real line: any map is applied with the same probability as its inverse. We have obtained (again, under very mild assumptions) a number of interesting conclusions. That is: any orbit almost surely oscillates between plus and minus infinity; there exists a stationary measure, but an infinite one (and there are no finite ones). Again, the distance between random orbits of any two initial points tends to zero, at least, while they return to a compact part of the real line (or everywhere, if one makes a suitable change of coordinates).

Finally, I will mention some interesting results by Anna Gordenko, devoted to the non-symmetric case: in this case, there is an interesting duality between random dynamics of forward maps and the one of their inverses.