

# SEMINÁRIO

## ANÁLISE E EQUAÇÕES DIFERENCIAIS

**22 de Maio | 14h00 | sala 6.2.33**

### **Uniform convergence rate for Birkhoff means of certain uniquely ergodic toral maps**

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**Abstract:**

The first goal of this talk is to present a Fourier analytical proof of (an extension of) the Denjoy-Koksma inequality, as well as an example showing its sharpness. While more technical than the original proof of Hermann, our approach has the advantage of being easily adapted to other related contexts. Thus we obtain an estimate on the uniform convergence rate of the Birkhoff averages of a higher dimensional torus translation given by a frequency satisfying a generic arithmetic condition and a continuous observable. This convergence rate depends explicitly on the modulus of continuity of the observable and on the arithmetic properties of the frequency. Furthermore, we obtain similar results for affine skew product toral transformations. (Joint work with Xiao-Chuan Liu and Aline Melo.)

