



Programa de Pós-Graduação em  
**Matemática**



**APRESENTA:**

**Quasilinear equations with critical  
exponential growth in the zero mass  
case**

**05/09/2025 às 14h00**

*Local: Auditório da UAMat-UFPE*

**Prof. Dr. José Carlos de Albuquerque  
Melo Júnior**

**Universidade Federal de Pernambuco**





UNIVERSIDADE FEDERAL DE CAMPINA GRANDE  
CENTRO DE CIÊNCIAS E TECNOLOGIA  
UNIDADE ACADÊMICA DE MATEMÁTICA



CICLO DE CONFERÊNCIAS 2025  
DO PPGMAT/UFCG

## Quasilinear equations with critical exponential growth in the zero mass case

Prof. Dr. José Carlos de Albuquerque Melo Júnior<sup>†</sup>  
Universidade Federal de Pernambuco

05/09/2025 às 14h00  
Local: Auditório da UAMat – UFCG

**Resumo.** In this talk, we address a class of quasilinear elliptic equations in the zero mass case, involving nonlinearity with critical exponential growth. By imposing suitable conditions on non-homogeneous weights, we introduce an appropriate functional framework that allows the use of variational methods to obtain weak solutions. A key ingredient in our analysis is a Hardy-type inequality for radial functions. Our approach combines a novel Trudinger–Moser-type inequality, a version of the Symmetric Criticality Principle, and the Mountain Pass Theorem.

---

<sup>†</sup>E-mail: [josecarlos.melojunior@ufpe.br](mailto:josecarlos.melojunior@ufpe.br)