# Nonlinear Differential Systems in Applied Sciences PNRR-C9-I8 CF 22/14.11.2022 Scientific Seminar University of Craiova, June 18 2025



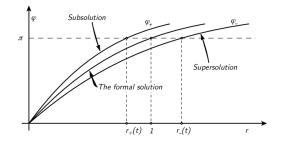
Existence and unicity of positive solution to a rapidly growing problem via sub-supersolution method

 In this paper we study the validity of the subsupersolution method for the equation

$$\begin{cases} -\operatorname{div}(K(x)\nabla u) = K(x)|x|^{\alpha-2}f(x,u) \text{ in } \mathbb{R}^N, \\ u > 0 \text{ in } \mathbb{R}^N, \end{cases}$$

where  $N \ge 3$ ,  $K(x) = exp(|x|^{\alpha}/4)$ ,  $\alpha \ge 2$  and f is a continuous function, the hypothesis will be given later. We apply the method for f singular and f like a logistic function, showing in both cases existence and uniqueness of positive solution.

#### Logistic growth



# PLENARY SPEAKER Giovany M. Figueiredo

## Universidade de Brasilia - UNB

#### Formation

- 2004 PhD in Mathematics, UNICAMP State University of Campinas under the supervision of Professor Claudianor Oliveira Alves
- 2017 Full Professor at UNB University of Brasilia
- 2021 2023 Board of Directors of SBM -Brazilian Mathematical Society
- In 2021 on the list of the best researchers in Latin America

#### **Domain of interest**

- Partial Differential Equations
- Elliptic problems

# ORGANIZERS

Faculty of Sciences, Department of Mathematics, Location: University of Craiova, Room C219, 16:00

### CONTACT

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