



APRESENTA:

Heteroclinic Solutions for Some Classes of Prescribed Mean Curvature Equations in Whole \mathbb{R}^2

13/09/2024 às 10h00
Auditório da UAMat

Prof. Dr. Renan J. S. Isneri
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UNIVERSIDADE FEDERAL DE CAMPINA GRANDE
CENTRO DE CIÊNCIAS E TECNOLOGIA
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Renan J. S. Isneri[†]

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Abstract. In this talk, we will discuss our recent work on the existence of heteroclinic solutions for specific classes of prescribed mean curvature equations using variational methods. The focus is on equations of the form

$$-\operatorname{div} \left(\frac{\nabla u}{\sqrt{1 + |\nabla u|^2}} \right) + A(\epsilon x, y)V'(u) = 0 \quad \text{in } \mathbb{R}^2,$$

where $\epsilon > 0$, and V represents a double-well potential with minima at $t = \alpha$ and $t = \beta$, with $\alpha < \beta$. The function $A(x, y)$ is considered to be oscillatory in the variable y and satisfies different geometric conditions, such as periodicity in all variables or asymptotic periodicity at infinity. We will delve into the main techniques used, emphasizing the variational approach that allowed us to prove the existence of heteroclinic connections between α and β . The results provide significant insights into the complex behavior of solutions influenced by oscillatory environments.

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