

# ICRAMCS 2026

THE EIGHTH EDITION OF THE INTERNATIONAL CONFERENCE ON  
RESEARCH IN APPLIED MATHEMATICS AND COMPUTER SCIENCE

April 23-24-25, 2026 | Marrakech, Morocco



## Mathematical Modeling of Canine and Human Rabies

### Communication Info

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#### Keywords:

- (1) Rabies
- (2) Basic reproduction number
- (3) sensitivity analysis

### Abstract

This article presents a deterministic model describing the joint dynamics of canine and human rabies in a cross-border context. This model explicitly integrates dog mobility between two neighboring countries and allows for the evaluation of the impact of these movements on disease persistence. We analyze the basic reproduction number  $\mathcal{R}_0$ , study the local and global stability of equilibrium points, identify the most influential parameters through sensitivity analysis, and perform numerical simulations to test the effectiveness of various vaccination and movement control strategies.

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