# Establishing traveling wave in bistable reaction-diffusion system by feedback

**Pierre-Alexandre Bliman**[1] **Nicolas Vauchelet**[2]

[1] *Sorbonne Université, Université Paris-Diderot SPC, Inria, CNRS, Laboratoire Jacques-Louis Lions, équipe Mamba, F-75005 Paris, France*
pierre-alexandre.bliman@inria.fr

[2] *Université Paris 13. LAGA - UMR 7539. Institut Galilée, Paris, France*
vauchelet@math.univ-paris13.fr

Several stains of the intracellular parasitic bacterium *Wolbachia* limit severely the competence of the mosquitoes *Aedes aegypti* as a vector of dengue fever and possibly other arboviroses. For this reason, the release of mosquitoes infected by this bacterium in natural populations is presently considered a promising tool in the control of these diseases. Following works by N. Barton and M. Turelli, and subsequently M. Strugarek *et al.*, we consider a simple scalar reaction-diffusion model describing the evolution of the proportion of infected mosquitoes, sufficient to reveal the bistable nature of the *Wolbachia* dynamics. A simple distributed feedback law is proposed, whose application on a compact domain during finite time is shown to be sufficient to invade the whole space. The corresponding stabilization result is established for any space dimension.

## References

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