

# Mathematical modeling of spatial propagation of Wolbachia to control dengue spread

Nicolas Vauchelet<sup>1</sup>, Grégoire Nadin<sup>2</sup>, Martin Strugarek<sup>3</sup>,  
Jorge Zubelli<sup>4</sup>

<sup>1</sup> Université Paris 13

<sup>2</sup> Sorbonne Université and CNRS

<sup>3</sup> Sorbonne Université

<sup>4</sup> IMPA

*Aedes* mosquitoes are the main vectors of several diseases like dengue, chikungunya, zika. New strategies of control consist in acting on the mosquitoes population. For example, it has been observed that when a mosquito is infected by the bacteria Wolbachia it cannot transmit such diseases. Moreover, Wolbachia is transmitted from mother to offspring and is characterized by a cytoplasmic incompatibility. Then a strategy of fight against arboviruses consists in releasing Wolbachia infected mosquitoes. After presenting the mathematical modeling of the spatial spread of this bacteria thanks to reaction-diffusion equations, we investigate the success of the spatial invasion thanks to local releases and the influence of spatial heterogeneities.

## References

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