

MODELING IN BIOSCIENCES, MODEL ANALYSIS AND SIMULATIONS

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1 Not yet published manuscripts

J.B. Burie, A. Calonnec, M. Langlais, Y. Mammeri. *Modeling the spread of a pathogen over a spatially heterogeneous growing crop*. IEEE 4th International Symposium on Plant Growth Modeling, Simulation, Visualization and Applications (PMA 12), Shanghai, China (fall 2012).

2 Main publications,

Maud V.P. Charron, T. Balenghien, H. Seegers, M. Langlais, P. Ezanno. *How can diptera-borne viruses persist during unfavourable season?* PLoS ONE, 2013 8(9): e74213.

M. Lélou, S. Gandon, M. Langlais, M.L. Pouille, E. Gilot-Fromont. *When should a trophically and vertically transmitted parasite manipulate its intermediate host? The case of Toxoplasma gondii*. Proc R Soc B 280: 20131143. <http://dx.doi.org/10.1098/rspb.2013.1143>

M. Charron, G. Kluiters, M. Langlais, H. Seegers, M. Baylis, P. Ezanno. *Seasonal and spatial heterogeneities in host and vector abundances impact the spatiotemporal spread of bluetongue*. Veterinary Research, 2013 44:44. doi:10.1186/1297-9716-44-44

A Calonnec, B Richard, D Andrivon, A Baranger, JE Chauvin, R Faivre, P Casadebaig, S Guyader, JF Bussière, M Langlais, B Tivoli. *Modéliser les interactions entre développement de la plante, architecture du couvert et épidémies de maladies fongiques aériennes, pour une gestion durable des cultures*. Innovations Agronomiques, 28 (2013) 201-219.

P. Casadebaig, G. Quesnel, M. Langlais, R. Faivre. *A Generic Model to Simulate Air-borne Diseases as a Function of Crop Architecture*. Plos ONE, (November 2012). doi:10.1371/journal.pone.0049406

A. Calonnec, J.B. Burie, M. Langlais, S. Guyader, S. Saint-Jean, I. Sache, B. Tivoli. *Impacts of plant growth and architecture on pathogen processes and their consequences for epidemic behaviour*. European Journal of Plant Pathology, (2012). DOI : 10.1007/s10658-012-0111-5.

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M. Lélou, M. Langlais, M.L. Pouille, E. Gilot-Fromont. *Transmission dynamics of Toxoplasma gondii along an urban-rural gradient*. Theor. Popul. Biol., 78 (2010) 139-147.

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3 Book chapters,

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- W.E. Fitzgibbon, M. Langlais. *Simple Models for the Transmission of Microparasites Between Host Populations Living on non Coincident Spatial Domains*. Chapitre 3 p. 115-164 in: P. Magal, S. Ruan (Eds), Structured Population Models in Biology and Epidemiology, Lecture Notes in Mathematics (Mathematical Biosciences Subseries) vol. 1936, (2008), Springer.
- M. Langlais. *L'épidémiologie humaine: conditions de son développement en France et rôle des mathématiques*, RST 23 Académie des Sciences, animateur A-J. Valleron, EDP Sciences, 2006; sous-chapitre 4.4, section 3 essentiellement.
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4 Miscellaneous

- J.B. Burie, M. Langlais, A. Calonnec. *Effect of Crop Growth and Susceptibility on the Dynamics of a Plant Disease Epidemic: Powdery Mildew of Grapevine*. In Li, B., Guo, Y., Jaeger, M. (Eds) The Third International Symposium on Plant Growth Modeling, Simulation, Visualization and Applications (PMA 09), Beijing, China. IEEE Computer Society Los Alamitos, (2010), 119-122.
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