

# Publications scientifiques (mise à jour: janvier 2017)

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3 février 2017

## 1 Publications

### 1.1 Articles dans revues internationales avec comité de lecture

- [1] F. De Vuyst, Efficient solvers for time-dependent problems : a review of IMEX, LATIN, PARAEXP and PARAREAL algorithms for heat-type problems with potential use of approximate exponential integrators and reduced-order models, *Advanced Modeling and Simulation in Engineering Sciences (AMSES)*, 3 :8, DOI : 10.1186/s40323-016-0063-y (2016).
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- [4] Le Coënt, A., De Vuyst, F., Rey, C., Chamoin, L. and Fribourg, L., Guaranteed control of switched control systems using model order reduction and state-space bisection, *Int. J. Dynam. Control* (2016). doi :10.1007/s40435-016-0245-y
- [5] D.A. Barcarolo, D. Le Touzé, G. Oger, F. De Vuyst, Adaptive particle refinement and derefinement applied to the smoothed particle hydrodynamics method, *Journal of Computational Physics*, 273, 640–657 (2014), DOI : 10.1016/j.jcp.2014.05.040.
- [6] A. Bernard-Champmartin and F. De Vuyst, A low diffusive Lagrange-remap scheme for the simulation of violent air-water free-surface flows, *Journal of Computational Physics*, Vol. 274, pp 19–49 (2014).
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- [10] D. Bui, M. Hamdaoui and F. De Vuyst, POD-ISAT : a new and efficient reduced-order modeling method for the representation of parameterized finite element solutions. Application to aircraft air control systems, *International Journal for Numerical Method in Engineering (IJNME)*, 94 :648–671, DOI : 10.1002/nme.4468 (2013).

- [11] C. Audouze, F. De Vuyst, P. B. Nair, Nonintrusive reduced-order modeling of parameterized time-dependent partial differential equations, *Numerical Methods for Partial Differential Equations*, Volume 29, Issue 5, pp 1587-1628, DOI : 10.1002/num.21768 (2013).
- [12] L. Larue, F. De Vuyst and V. Delmas, Modeling of Melanoblasts Development, *Cellular And Molecular Life Sciences* (2012), DOI : 10.1007/s00018-012-1112-4
- [13] Yamaguchi, H., Niu, X.-D., Nagaoka, S., De Vuyst F., Solid-liquid two-phase flow measurement using the electromagnetically induced signal measurement method, *Journal of Fluids Engineering*, Transactions of the ASME, 133(2011), 041302.
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- [16] R. Billot, C. Chalons, F. De Vuyst, N. E. El Faouzi, J. Sau, A conditionally linearly stable second order traffic model built from a Vlasov kinetic description, *Comptes Rendus Mécanique*, 338(9), 529–537 (2010)
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## 1.2 Articles dans revues nationales avec comité de lecture

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- [33] M. Joliveau et F. De Vuyst, Recherche de motifs de cas atypiques pour le trafic routier urbain, *Revue des Nouvelles Technologies de l'Information RNTI-E-11 Cepaduès-éditions*, F. Guillet & B. Trousse Eds., Vol. 2, 523-534 (2008). Prix du meilleur article applicatif de la conférence Extraction et Gestion des Connaissances EGC 2008.
- [34] Bauzer-Medeiros, C. and Carles, O. and De Vuyst, F. and Hugueney, B. and Joliveau, M. and Jomier, G. and Manouvrier, M. and Naija, Y. and Scemama, G. and Steffan, L., "Vers un entrepôt de données pour le trafic routier", *Entrepôts de données et Analyse en Ligne EDA'06*, *Revue des Nouvelles Technologies de l'Information - RNTI - B2*, D. Grigori et al. Eds, Cépaduès (2006).
- [35] F. Alouges, F. De Vuyst, G. Le Coq, E. Lorin, Un procédé de réduction de la diffusion numérique des schémas à différence de flux d'ordre un pour les systèmes hyperboliques non linéaires, *Comptes Rendus de l'Académie des Sciences, Série I*, Vol. 335, Issue 7, pp. 627-632 (2002).
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### 1.3 Articles dans la nouvelle Revue des Mathématiques de l'Enseignement Supérieur (RMS)

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- [40] F. De Vuyst, Modélisation des files d'attente continues à plusieurs classes de fluide, RMS n° 3, 2001-2002, pp. 407–440, Vuibert. ISBN : 2-7117-9130-0.

### 1.4 Autres articles soumis

- [41] A. Le Coënt, F. De Vuyst, L. Chamoin and L. Fribourg, Switched control synthesis for nonlinear dissipative ODE, submitted to SNR'17 (2017).
- [42] F. De Vuyst, A. Le Coënt, L. Chamoin and L. Fribourg, Guaranteed control synthesis of ODE-PDE switched control systems using model order reduction, submitted to COMPLAS 2017 (2017).
- [43] F. De Vuyst, Lagrange-flux schemes and the entropy property, submitted to FVCA 8 (2017).
- [44] V. Loridan, J.F. Ripoll and F. De Vuyst, The analytical solution of the transient radial diffusion equation with a non-uniform loss term, Journal of Geophysical Research - Space Physics, submitted (2017).

### 1.5 Autres articles, non publiés

- [45] F. De Vuyst, M. Béchereau, T. Gasc, R. Motte, M. Peybernes, R. Poncet, Stable and accurate low-diffusive interface capturing advection schemes, arXiv :1605.07091v1 (2016).
- [46] F. De Vuyst, Numerical simulation of a tidal wave with debris density and damage estimators (2017).
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### 1.6 Articles de conférences internationales dans Proceedings, avec comité de lecture

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- [50] S. Masfarau, F. Danes, P.-E. Dumouchel, F. De Vuyst, N. Vayatis, exploration by exhaustive graph generation, in Proceedings of the WCCM XII Conference 2016, Seoul Korea (2016).

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- [52] F. De Vuyst, T. Gasc, R. Motte, M. Peybernes, R. Poncet, Lagrange-Flux Eulerian schemes for compressible multimaterial flows, Proc. of the ECCOMAS Congress 2016, VII Eur. Congress on Comp. Meth. in Appl. Sci. and Eng., Crete, 1165–1178 (2016). ISBN : 978-618-82844-0-1
- [53] A. Le Coënt, F. De Vuyst, C. Rey, L. Chamoin and L. Fribourg, Guaranteed control of switched control systems using model order reduction and state-space bisection, Proc. of the 2nd International Workshop on Synthesis of Complex Parameters (SynCoP'15), OpenAccess Series in Informatics (OASISs), 44, pp. 33–47 (2015).
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## 1.7 Chapitres d’ouvrage

- [78] C. Audouze, F. Daim, F. De Vuyst, P. Laurent, and I. Muni Toke, The parareal algorithm as time domain decomposition method. Applications in Finance and Biology, chapter in "Schwarz algorithms and domain decompositions methods", Volume 3, F. Magoulès Eds, ISBN 978-1-874672-38-8, Saxe-Coburg publications, UK (2013).
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## 1.8 Ouvrages d’enseignement

- [81] F. De Vuyst, Numerical modeling of transport problems using FreeFem++ software – with examples in biology, CFD, traffic flow and energy transfer, en ligne sur HAL archive ouvertes et CEL cours en ligne, 162 pages, <https://cel.archives-ouvertes.fr/cel-00842234> (2013).

## 1.9 Participation à articles grand public, vulgarisation, promotion des mathématiques appliquées

- [82] Journal *The Conversation* : F ; De Vuyst, Anticiper les tsunamis grâce aux mathématiques (2015). Lien web : <https://theconversation.com/anticiper-les-tsunamis-grace-aux-mathematiques-51455>.
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