

# CURRICULUM VITAE

## CONTACT

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Guillaume CHAUVET

Born February 18, 1977, in Clermont-Ferrand (63). French nationality

Ecole Nationale de la Statistique et de l'Analyse de l'Information (ENSAI)

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## PROFESSIONAL POSITIONS

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2009-	<b>Assistant Research Professor.</b> Ensai, Bruz.
2009-2012	<b>Head of the Biostatistics Specialization.</b>
2007-2009	<b>Methodologist.</b> Regional direction of INSEE, Rennes.
2004-2009	<b>Junior researcher in survey methodology.</b> CREST, ENSAI, Bruz.
2001-2003	<b>Methodologist for the French Census.</b> Regional direction of INSEE, Lyon.
1999-2001	<b>Technical support volunteer.</b> Regional service of INSEE, Fort de France.

## EDUCATION

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2014	<b>Habilitation à Diriger des Recherches.</b> University of Rennes 1.
2007	<b>PhD in Statistics.</b> University of Rennes 2.
2004	<b>MS in Statistics.</b> University of Rennes 1.
1997-1999	<b>Civil servant training.</b> ENSAI, Bruz.

## RESEARCH INTERESTS

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Balanced sampling, variance estimation, resampling techniques, calibration methods, asymptotic results, treatment of non-response, forest sampling, spatial sampling, epidemiology, record linkage.

## SCIENTIFIC DUTIES

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2022-2023	Member of the scientific committee of the 12th French-speaking conference in survey sampling (Paris, France)
2021-2022	Head of the Steering Committee of the 7th French-speaking conference on teaching statistics (CFIES) (Bruz, France)
2018-2021	Head of the Scientific Council of the Centre d'Études des Supports de Publicité (CESP)
2019-	Member of the scientific committee (CST) of IGN, section "Inventaire des ressources forestières"
2019-2022	Co-head of the specialized group in survey sampling of the french statistical society (SFDS)
2018	Member of the scientific committee of the conference "Survey Methods and their Use in Related Fields" (SMURF) (Neuchâtel, Switzerland)
2017-2018	Member of the scientific and of the steering committee of the European Course in Advanced Statistics (ECAS) on statistical privacy (Bruz, France)
2017-2018	Member of the scientific committee of the 50th Journées de Statistique of the SFDS (Saclay, France)
2016-2019	Head of the specialized group in survey sampling of the french statistical society (SFDS)
2016-2018	President of the Scientific Council of the CESP
2015-2016	Head of the scientific committee of the 9th French-speaking conference in survey sampling (Gatineau, Canada)
2015-2018	Member of the comity of experts for the impregnation study of Santé Publique France (SPF) on the mine sites of the Gard department
2014-2015	Member of the scientific committee of the Journées de Méthodologie Statistique (JMS) of INSEE (Paris, France)
2014-2019	Member of the scientific council of the National Program for biomonitoring for the Esteban survey (SPF, Paris, France)
2013-2014	Co-head of the scientific committee of the 8th French-speaking conference in survey sampling (Dijon, France)
2012-2013	Member of the scientific committee of the 45th Journées de Statistique of the SFDS (Toulouse, France)
2012-2013	Member of the scientific and of the steering committee of the 7th French-speaking conference in survey sampling (Bruz, France)
2008-	Member of the scientific committee of the Journées de Méthodes Avancées pour l'Analyse de Sondages Complexes (MAASC)

## EDITORIAL BOARDS

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2019-	Associate editor of Survey Methodology.
2019-	Associate editor of Journal of Official Statistics.
2018-2022	Associate editor of Journal of the Royal Statistical Society, Series A.
2014-2021	Associate editor of the Journal de la SFDS.
2013-2014	Guest editor (joint with D. Haziza) of a special issue on survey sampling of the Journal de la SFDS.

## STUDENT ADVISING

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- 2021-  
2021- Jean Rubin. *Bootstrap methods in sample surveys*.  
Trinh Duong, joint with O. Bouriaud (IGN).  
*Dynamic sampling and inference for a smart forest monitoring with application to the french National Forest Inventory*.
- 2019- Thanh Huan Vo, joint with V. Garès (INSA).  
*Record Linkage for Medical data*.
- 2018-2021 Marie-Astrid Metten, joint with J-F. Viel and N. Costet (IRSET).  
*Missing data in cohort studies : comparison between Inverse Probability Weighing and Multiple Imputation*.
- 2013-2016 Hélène Juillard, joint with S. Legleye (Ined) and A. Ruiz-Gazen (TSE).  
*Estimation and variance estimation methods in a longitudinal survey with application to the ELFE survey*

## EXTERNAL EXAMINOR FOR PhD JURYS

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- 2020 Martina Patone, university of Southampton. *Topics of statistical analysis with social media data*
- 2018 Audric Vigier (university of Nantes). *Development of a spatial management strategy evaluation framework : application to the North-East Atlantic northern hake stock and to the Bay of Biscay mixed demersal fisheries*
- 2016 Cécile Souty (university of Paris VI). *Methods for epidemiological surveillance data analysis : application to the Sentinelles network (France)*

## MEMBER OF PhD JURYS

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- 2013 Jean-Paul Lucas (university of Nantes). *Contamination des logements par le plomb : prévalence des logements à risque et identification des déterminants de la contamination*
- 2012 Pauline Lardin (university of Burgundy). *Estimate the mean electricity consumption curve by survey and taking auxiliary information into account*
- 2012 Muhammad Shehzad (university of Burgundy). *Penalization and data reduction of auxiliary variables in survey sampling*

## MEMBER OF CSI FOR PhD STUDENTS

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- 2019- Ankit Sagar (LIF, university of Lorraine). *Multisource Forest Inventory : A generic and flexible tool for forest resource estimation and mapping at a fine scale*
- 2019- Marine Renier (university of Caen-Normandie). *Exposition professionnelle à des pesticides et risque de cancers de la prostate, du sein et de l'ovaire à partir de la cohorte AGRICulture et CANcer (AGRICAN)*

## PUBLICATIONS

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- (1) G. Chauvet, Y. Tillé (2006). *A fast algorithm of Balanced Sampling*. Computational Statistics, 21, 53-61.
- (2) G. Chauvet, Y. Tillé (2007). *Application of Fast SAS Macros for Balancing Samples to the Selection of Addresses*. Case Studies in Business, Industry and Government Statistics, 2.
- (3) G. Chauvet (2009). *Stratified Balanced Sampling*. Survey Methodology, 35, 115-119.
- (4) D. Haziza, G. Chauvet, J.C. Deville (2010). *A note on sampling and estimation in the presence of cut-off sampling*. Australian and New-Zealand Journal of Statistics, 52, 303-319.
- (5) F.J. Breidt, G. Chauvet (2011). *Improved variance estimation for balanced samples drawn via the Cube method*. Journal of Statistical Planning and Inference, 141, 479-487.
- (6) G. Chauvet, D. Bonnery, J.C. Deville (2011). *Optimal inclusion probabilities for balanced sampling*. Journal of Statistical Planning and Inference, 141, 984-994.
- (7) G. Chauvet, J.C. Deville, D. Haziza (2011). *On balanced random imputation in surveys*. Biometrika, 98, 459-471.
- (8) G. Chauvet (2011). *On variance estimation for the French Master Sample*. Journal of Official Statistics, 27(4), 651-668.
- (9) M. Chandesris, G. Chauvet, J.C. Deville (2011). *Allocation optimale pour un plan à plusieurs degrés. Application à l'estimation de la fraude tarifaire grandes lignes à la SNCF*. Journal de la SFdS, 152(4), 47-59.
- (10) G. Chauvet, D. Haziza (2012). *Fully efficient estimation of coefficients of correlation in the presence of imputed data*. Canadian Journal of Statistics, 40(1), 124-149.
- (11) G. Chauvet (2012). *On a characterization of ordered pivotal sampling*. Bernoulli, 18(4), 1320-1340.
- (12) F.J. Breidt, G. Chauvet (2012). *Penalized Balanced Sampling*. Biometrika, 99(4), 945-958.
- (13) G. Chauvet, G. Tandeau de Marsac (2014). *Estimation methods on multiple sampling frames in two-stage sampling designs*. Survey Methodology, 40(2), 367-378.
- (14) D. Haziza, C-O. Nambeu, G. Chauvet (2014). *Doubly robust imputation procedures for populations containing a large amount of zeroes in surveys*. Canadian Journal of Statistics, 42(4), 650-669.
- (15) G. Chauvet (2015). *Coupling Methods for multistage sampling*. Annals of Statistics, 43(6), 2484-2506.
- (16) G. Chauvet (2016). *Variance Estimation for the 2006 French Housing Survey*. Mathematical Population Studies, 23(3), 147-163.
- (17) H. Boistard, G. Chauvet, D. Haziza (2016). *Consistency of the estimated distribution function with missing data under a non-response model*. Scandinavian Journal of Statistics, 43(3), 683-699.
- (18) D. Hajage, Y. De Rycke, G. Chauvet, F. Tubach (2016), *Estimation of conditional and marginal odds ratios using the prognostic score*. Statistics in Medicine, 36(4), pp 687-716.
- (19) G. Chauvet, D. Haziza et E. Lesage (2017). *Examining some aspects of balanced sampling in surveys*. Statistica Sinica, 27(1), 313-334.
- (20) G. Chauvet (2017). *A comparison of pivotal sampling and unequal probability sampling with replacement*. Statistics and Probability Letters, 121, 1-5.
- (21) H. Juillard, G. Chauvet, A. Ruiz-gazen (2017). *Estimation under cross-classified sampling with application to a childhood survey*. Journal of the American Statistical Association, 112(518), pp. 850-858.
- (22) H. Juillard, G. Chauvet (2018). *Variance estimation under monotone non-response for a panel survey*. Survey Methodology, 44(2), pp. 269-289.
- (23) G. Chauvet, C. Goga (2018). *Gini coefficient and Gini coefficient change : linearization versus Bootstrap to estimate the variance*. Survey Methodology, 44(1), 17-42.
- (24) G. Chauvet, W. Do Paco (2018). *Exact balanced random imputation for sample survey data*. Computational Statistics and Data Analysis, 128(1), 1-16.

## PUBLICATIONS (CONTINUED)

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- (25) H. Chaput, G. Chauvet, D. Haziza, L. Salembier, J. Solard (2018), *Joint imputation procedures for categorical variables with application to the French Wealth Survey*. *Statistics and Applications*, 16, 123-144 (invited paper for a special issue in honor of Professor J.N.K. Rao).
- (26) L. Belin, G. Chauvet, Y. De Rycke, D. Hajage, F. Tubach (2019), *Closed-form variance estimator for weighted propensity score estimators with survival outcome*. *Biometrical Journal*, 60(6), 1151-1163.
- (27) B. Gelein, G. Chauvet (2020), *Preserving the distribution function in surveys in case of imputation for zero inflated data*. *Journal of Statistical Planning and Inference*, 206, 84-99.
- (28) G. Chauvet, R. Le Gleut (2020), *Inference under pivotal sampling : properties, variance estimation and application to tessellation for spatial sampling*. *A. Scandinavian Journal of Statistics*, 1-24.
- (29) G. Chauvet, A.A. Vallée (2020), *Consistency of estimators and variance estimators in two-stage sampling*. *Journal of the Royal Statistical Society Series B*, 82(3), 797-815.
- (30) G. Chauvet (2020), *Large sample properties of the Midzuno sampling scheme with probabilities proportional to size*. *Statistics and Probability Letters*, 159.
- (31) G. Chauvet (2021). *A note on Chromy's sampling procedure*. *Journal of Survey Statistics and Methodology*, 9(5), pp. 1050-1061.
- (32) L. Daniel, M. Michot, M. Esvan, P. Guérin, G. Chauvet, F. Pelé (2020). *Perceptions, knowledge and practices regarding indoor environmental pollution : a quantitative study among adults of childbearing age*. *International Journal of Environment Research and Public Health*, 17(20).
- (33) P. Bessonneau, G. Brilhault, G. Chauvet, C. Garcia (2021). *With-replacement bootstrap variance estimation for household surveys : principles, examples and implementation*. *Survey Methodology*, 47(2), pp. 313-347.
- (34) G. Chauvet, C. Goga (2022). *Asymptotic efficiency of the calibration estimator in a high-dimensional data setting*. *Journal of Statistical Planning and Inference*, 217, pp. 177-187.
- (35) V. Garès, G. Chauvet, D. Hajage (2022). *Closed-form variance estimators for weighted and stratified dose-response function estimators using generalized propensity score*. *Biomedical Journal*, 64(1), pp. 33-56.
- (36) M-A. Metten, N. Costet, J-F. Viel, G. Chauvet (2022). *Inverse probability weighting to handle attrition in cohort studies : some guidance and a call for caution*. *BMC Medical Research methodology*, 22(45).
- (37) G. Chauvet (2022). *A cautionary note on the Hanurav-Vijayan sampling algorithm*. *Journal of Survey Statistics and Methodology*.
- (38) Z. Chupeau, F. Mercier, E. Rouxel, B. Le Bot, G. Chauvet, T. Siméon, N. Bonvallot, C. Zaros, C. Chevrier, P. Glorennec (2022). *Pre- and post-natal exposure of children to organophosphate flame retardants : A nationwide survey in France*. *Environment International*, 168.

## WORK IN PROGRESS

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- (39) T-H. Vo, G. Chauvet, A. Happe, E. Oger, S. Paquelet, V. Garès (202X). *An extension of Fellegi-Sunter probabilistic record linkage model for mixed-type data with application to the French national health data system*. Resubmitted after revision to Computational Statistics and Data Analysis.
- (40) O. Bouriaud, P. Brion, G. Chauvet (202X). *An extension of the weight share method when using a continuous sampling frame*. Resubmitted after revision to Survey Methodology.
- (41) G. Chauvet, M. Gerber (202X), *Exponential inequalities for sampling designs*.
- (42) T-H. Vo, v. Garès, L-C. Zhang, A. Happe, E. Oger, S. Paquelet, G. Chauvet (202X). *Cox regression with linked data*.
- (43) J. Rubin, G. Chauvet (202X). *Bootstrap methods for cross-classified sampling designs*.
- (44) M-A. Metten, N. Costet, J-F. Viel, G. Chauvet (202X), Reflection on modern methods : a note on variance estimation when using inverse probability weighting to handle attrition in cohort studies.
- (45) O. Bouriaud, P. Brion, G. Chauvet (202X). *The weight share method in forest inventories : why we need plots to sample trees*.
- (46) D. Hajage, G. Chauvet, Y. De Rycke, F. Tubach (202X), *Variance estimation when weighting using the estimated propensity score to estimate a treatment effect on a binary outcome*.
- (47) G. Chauvet (202X), *Bootstrap for multistage sampling and unequal probability sampling of primary sampling units*.
- (48) G. Chauvet (202X), *Simplified variance estimation for multistage sample surveys*.
- (49) G. Chauvet (202X), *A note on the consistency of the Narain-Horvitz-Thompson estimator*.

## REFERREING

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AIMS Mathematics (3), Annales de l'ISUP (1), Austrian Journal of Statistics (1), Bernoulli (1), Biometrical Journal (2), Biometrics (2), Biometrika (2), BMC Medical Research Methodology (1), Brazilian Journal in Probability and Statistics (1), Canadian Journal of Forest Research (2), Columbian Journal in Statistics (1), Communications in Statistics (1), Computational Statistics and Data Analysis (3), Économie et Statistique (1), Electronic Journal of Statistics (1), Environmental and Ecological Statistics (1), Epidemiologic Methods (1), Fisheries research (1), Hacettepe Journal of Mathematics Statistics (1), IAOS Journal (1), International Statistical Review (2), Journal of Agricultural, Biological, and Environmental Statistics (1), Journal of the American Statistical Association (4), Journal of Multivariate Analysis (1), Journal of Official Statistics (10), Journal of Probability and Statistics (1), Journal of the Royal Statistical Society (2), Journal of Statistical Computation and Simulation (1), Journal de la SFdS (1), Journal of Statistical Planning and Inference (3), Journal of Statistical Theory and Practice (1), Journal of Survey Statistics and Methodology (3), Mathematical Population Studies (5), Mathematics (1), Metrika (1), Metron (3), Probability and Mathematical Statistics (1), Quality and Quantity (1), Revstat (2), Scandinavian Journal of Statistics (1), Science Progress (1), Scientific Reports (1), Sociological Methods and Research (1), Statistica Neerlandica (1), Statistica Sinica (3), Statistical Methods and Applications (2), Statistics(1), Statistics and Computing (1), Statistics in Transition (1), Statistics and Probability Letters (3), Survey Methodology (8), Transactions in GIS (1).

## INVITED TALKS

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- 2021 Simplified variance estimation for multistage sample surveys. Invited session, CMStatistics (London, United Kingdom).
- 2021 Estimation de variance par bootstrap : une approche pragmatique. Conférence d'ouverture, 11th french-speaking conference on survey sampling (Brussels, Belgium).
- 2018 Estimation de variance simplifiée pour les enquêtes à plusieurs degrés, 10th french-speaking conference on survey sampling (Lyon, France).
- 2018 Coupling methods in survey sampling. Survey Methods and their Use in Related Fields (SMURF) (Neuchâtel, Switzerland).
- 2017 Properties of pivotal sampling with application to spatial sampling, 65th Session of the International Statistical Institute (ISI) (Marrakech, Morocco).
- 2017 Properties of pivotal sampling with application to spatial sampling and sampling in datastreams, 49èmes Journées de la Société française de Statistique (Avignon, France).
- 2016 Exact balanced random imputation, 5th International Conference on Establishment Surveys (Geneva, Switzerland).
- 2015 Exact balanced random imputation, Joint Statistical Meeting (Seattle, United States).
- 2013 Doubly robust inference for complex parameters in the presence of missing survey data, Graybill Conference on Modern Survey Statistics, (Fort Collins, Colorado).
- 2010 Balanced random imputation, Journées MAASC (Dijon, France).
- 2009 Improved variance estimation for balanced samples drawn via the Cube method, Colloquium in honor Jean-Claude Deville (Neuchâtel, Switzerland).
- 2008 Bootstrap variance estimation for two-stage sampling, 40èmes Journées de la Société française de Statistique (Ottawa, Canada).
- 2008 Bootstrap methods in survey sampling, 5th french-speaking conference on survey sampling (Marseille, France).
- 2007 A fast method of balanced sampling, 55th Session of ISI (Lisbon, Portugal).

## CONTRACTS

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- 2021-2022      Bootstrap for cross-sectional estimations of the Life History and Wealth survey. Contract for INSEE, joint with Jean Rubin.
- 2017-2018      Cross-sectional estimation for a split-panel survey : estimation and bootstrap variance estimation. Contract for the Household Finance and Consumption Network of the European Central Bank.  
*Bootstrap variance estimation for a cross-sectional estimation*, 45 pages.  
*Longitudinal estimation for a panel survey : computation of weights and bootstrap variance estimation*, 34 pages.
- 2016-2018      Cross-sectional and longitudinal estimations for a panel survey. Contract for the Commissariat Général à l'Égalité des Territoires (CGET).  
*Estimation transversale pour l'enquête PPV*, 9 pages.  
*Calcul d'une pondération longitudinale pour l'enquête PPV*, 23 pages.  
*Estimation de variance pour une estimation transversale et pour une estimation longitudinale de l'enquête PPV*, 32 pages.
- 2015            Audit of the 2013/2014 national survey on hunting samples of the Office National de la Chasse et de la Faune Sauvage.
- 2014            Audit of the methodology of the SYCI2 survey of La Poste Recherche et Développement. Joint with Cyril Favre-Martinoz.  
*Rapport sur la note méthodologique du projet SYCI2*, 8 pages.
- 2014            Estimation of the consumption of customers. Contract for ERDF, joint with Cyril Favre-Martinoz and Eric Lesage.
- 2009-2010      Estimation of tariff fraud. Contract with SNCF, joint with Jean-Claude Deville.
- 2006-2007      Methodological support for the MORGOAT survey of the Observatoire Régional sur le Tourisme en Bretagne (ORTB). Joint with J-C. Deville.
- 2006-2007      Influence of a weighting variable on methods of data mining. Contract for France Telecom Recherche et Développement, joint with Denys Pommeret and Mohammed Tirari (Ensaï).  
*Prise en compte de la pondération des individus dans les méthodes de Data Mining*, 210 pages.
- 2005            Comparison of three calibration softwares. Contract for Statistics Belgium, joint with J-C. Deville, Josiane Le Guennec and Mohammed Tirari.  
*Evaluation de trois logiciels de calage : g-Calib 2.0, Calmar 2 et Bascula 4.0*. Working Paper n°11, Statistics Belgium, 92 pages.



## TEACHING

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2022	Winter school in survey sampling methods (Trento, Italy). Balanced sampling (3h). Calibration and treatment of non-response (3 h).
2021-	Survey sampling, M1. ENSAI, Bruz, 30h.
2019-	Survey sampling, M1. ENSAE, Saclay, 30h.
2017-	Longitudinal surveys, M2. ENSAI, Bruz, 18h.
2006-	Advanced sampling techniques, M2. ENSAI, Bruz, 18h.
2011-2021	Missing data, M1. ENSAI, Bruz, 21h.
2009-2014	Advanced sampling techniques, M1. ENSAI, Bruz, 21h.
2011	Workshop on sampling techniques : sampling, reweighting, variance estimation and small area estimation. Institut Henri Poincaré, Paris, 4 days.
2010-2018	Survey sampling, M1. ENSAI, Bruz, 30h.
2008-2012	Sampling techniques, M2. University of Rennes 2. Enseignement à l'université de Rennes 1 : cours de "Méthodes de Sondages" (M2), 20h.
2009-	Jury for the statistical projects (1st year, 2nd year, 3rd year). ENSAI, Bruz.
2009	Practical in Probability and Statistics, M1. ENS, Bruz, 15h.
2009	Workshop on bootstrap variance estimation. French-speaking conference in survey sampling, 3h.
2007-2016	Trainer for the European Statistical Training Program (ESTP). Federal office of statistics, Neuchâtel, Switzerland.
2006-	Trainer on sampling techniques. Centre d'Etude des Programmes Economiques (CEPE), Paris.
2006-2008	Sampling techniques, M1. ISUP, Paris, 20h.
2004	Workshop on the cube method. Institut Henri Poincaré, Paris, 3h.

## INSEE WORKGROUPS

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2014-2015	Econometry with survey data
2009-2010	Measure, analysis and documentation of the statistical accuracy of the Census estimates
2009-2010	Infra-municipal estimations with Census data
2008-2009	Use of Census variables influenced by economic conditions
2008-2009	Redesign of the Labour Force survey <i>Calcul de précision associé au tirage de secteurs pour le complément d'échantillon de l'Enquête Emploi. Rapport technique, Insee.</i> <i>Echantillonnage et sous-échantillonnage de secteurs pour l'Enquête Emploi. Technical report, INSEE.</i>
2007-2008	Estimation sur zones mixtes <i>Estimation de précision sur zones mixtes. Technical report, INSEE.</i>
2005-2006	Technical support for households surveys <i>Plan de sondage préconisé pour les extensions locales de l'enquête logement 2006 et travaux réalisés dans les DR pour sa mise en oeuvre. Technical report 102/SES/ISM, INSEE, Rennes.</i>