

# PEDRO ALBERTO MORETTIN

## Abbreviated Curriculum Vitae

### 1. Personal

Citizenship: Brazilian

Home address: Rua Evezu,14, 05447-160-São Paulo, Brazil

Office address: University of São Paulo, Dept. Statistics

C.P. 66281, 05311-970- São Paulo, Brazil

Telephone: (55-11) 3091-6125

Fax: (55-11) 3091-6130

e-mail: pam@ime.usp.br

<http://www.ime.usp.br/~pam>

### 2. University Studies

Undergraduate: B.S in Mathematics, University of São Paulo, 1963.

Graduate: M.A and Ph.D in Statistics, University of California, Berkeley, 1971/1972.

### 3. Current and Past Posts

- . Professor, Institute of Mathematics and Statistics, University of São Paulo, Brazil (1965 to date).
- . Chairman, Statistics Department, University of São Paulo (1982-1985).
- . Chairman, Graduate Committee, Institute of Mathematics and Statistics, USP (1978-1980).
- . Dean, Institute of Mathematics and Statistics, USP (1990-1993).
- . Professor, Graduate Program in Physical Oceanography, USP (1976 to date).
- . Vice-President, International Statistical Institute (1995-1997).
- . Vice-President(1996-1997) and President-elect (1998-1999), Interamerican Statistical Institute.
- . President, Brazilian Statistical Association (1994-1996).
- . Editor-in-Chief, Brazilian Journal of Statistics (1987-1990, 2000-2006).
- . Editor-in-Chief, Estadística, Journal of IASI (1982-1991).
- . Associate Editor, International J. of Forecasting (1986-1998)
- . Associate Editor, Journal of Forecasting (1999 to date)

- . Visiting Scholar, University of Tucuman, Argentina (1980, 1988, 1994, 1999, 2002), University of California, Berkeley (1994, 1998, 1999, 2000, 2001), University of California, Davis (1991), Catholic University, Lima, Peru (2002, 2006).

#### **4. Current Research Interests**

- . Time Series Analysis: spectral analysis, Bayesian analysis, wavelets.
- . Applications in physical sciences, economics and finance.
- . Teaching of statistics.

#### **5. Grants and Fellowships**

- . FAPESP (Fundação de Amparo à Pesquisa do Estado de São Paulo) fellowship, 1969-1972: Ph.D degree.
- . Recipient of several research grants from FAPESP (Research Foundation, State of São Paulo), CNPq (National Research Council), CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) (1972 to date).
- . CNPq grant : 1991-1994 and 1995-1997.
- . Fundación Antorchas(Argentina) grant(with Professor R.P. Mentz), 1994-1996.
- . CNPq-NSF grant (with Professor David Brillinger), 1997-2001.
- . FAPESP Grant: 2005-2007.
- . CAPES Grant: 2008-2011
- . FAPESP Grant: 2008-2011

#### **6. Supervision of Students and Theses**

- . Supervised 26 master's dissertations; 2 under completion.
- . Supervised 19 Ph.D theses; 4 under completion.
- . Undergraduate and graduate advisor for several students.

#### **7. Main Recent Publications and Technical Reports**

- . J.R. Sato, S. Costafreda, P.A. Morettin and M.J. Brammer(2008). Measuring Time Series Predictability Using Support Vector Regression. *Communications in Statistics-Simulation and Computation*, Vol. 37, 1183-1197.

- . J.R. Sato, J. Mouro-Miranda, M.G. Martin, E.Amaro Jr, P.A. Morettin and M.J. Brammer (2008). The Impact of Functional Connectivity Changes on

Support Vector Machines Mapping of fMRI Data. *Journal of Neuroscience Methods*, Vol. 172, 94-104.

. J.R. Sato, C. Chiann, E. Taniguchi, E. G. dos Santos, P.R. Arantes, M.L. Mourao, E. Amaro Jr and P.A. Morettin (2008). Identifying multi-subject cortical activation in fMRI: a frequency domain approach. *Journal of Data Science*, Vol. 6, 89-103.

. Salcedo, G., Sato, R., Morettin, P., Toloi, C. (2008). Comparing Time-varying Autoregressive Structures of Locally Stationary Processes. *International Journal of Wavelets, Multiresolution and Information Processing*, Vol. 6, 1-23.

. Sato, JR, Takahashi, DY, Arcuri, SM, Sameshima, K, Morettin, PA, Baccala, LA. (2007). Frequency Domain Connectivity Identification: An Application of Partial Directed Coherence in fMRI. To appear, *Human Brain Mapping*.

. Fujita, A, Sato, JR, Garay-Malpartida, HM, Morettin, PA, Sogayar, MC and Ferreira, CE. (2007). Time-varying Modelling of Gene Expression Regulatory Networks Using the Wavelet Dynamic Vector Autoregressive Method. *Bioinformatics*, Vol. 23, 1623-1630.

. Sato, JR, Fujita, A, Amaro Jr, E, Mourao-Miranda, J, Morettin, PA and Brammer, MJ. (2007). DWT-CEM: An Algorithm for Scale-Temporal Clustering in fMRI. *Biological Cybernetics*, Vol. 97, 33-45.

. Porto, R.F., Sato, J.R., Aubin, E.C. and Morettin, P.A. (2007). Wavelet Smoothing for Data with Autocorrelated Errors. *Current Development in Theory and Applications of Wavelets*, Vol. 1, 143-164.

. Morettin, P.A. and Chiann, C. (2007). Estimation of Functional-Coefficient Autoregressive Models by Wavelet Methods. *Current Developments in Theory and Applications of Wavelets*, Vol. 1, 309-340.

. R.D. Porto, P.A. Morettin and E.Q. Aubin (2007). Wavelet Regression with Correlated Errors on a Piecewise Holder Class. To appear, *Statistics and Probability Letters*.

. Sato, J.R., Morettin, P.A., Arantes, P.R. and Amaro Jr, E. (2007). Wavelet-based Time-varying Vector Autoregressive Modelling. *Computational Statistics and Data Analysis*, Volume 51, 5847-5866.

. Sato, J.R., Amaro Jr., E., Takahashi, D., Felix, D.M., Brammer, M.J. and Morettin, P.A. (2006). A Method to Produce Evolving Functional Connectivity Maps During the Course of an fMRI Experiment Using Wavelet-based Time-

varying Granger Causality. *NeuroImage*, 31, 187-196.

. Chiann, C. and Morettin, P.A. (2005). Time-domain Nonlinear Estimators of Time-varying Linear Systems. *Journal of Nonparametric Statistics*, 17, 365-383.

. Lagos, B. and Morettin, P.A. (2004). Improvement of the Likelihood Ratio Test Statistic in ARMA Models. *Journal of Time Series Analysis*, 25, 83-101.

. Ariño, M., Morettin, P.A. and Vidakovic, B. (2004). The scalogram and applications to economic time series. *Brazilian Journal of Probability and Statistics*, 18.

. Sáfadi, T. and Morettin, P.A. (2003). Autoregressive Models with Random Normal Coefficients. *Journal of Statistical Computation and Simulation*.

. Zandonade, E. and Morettin, P.A. (2003). Wavelets in State Space Models. *Applied Stochastic Models in Business and Industry*, Vol. 19, 199-219.

. Sáfadi, T. and Morettin, P.A. (2002). A Bayesian Analysis of the Open Loop Threshold Autoregressive Model. *Brazilian Journal of Statistics*.

. Brillinger, D.R., Morettin, P. A., Irizarry, R. and Chiann, C. (2001). Automatic Methods for Generating Seismic Intensity Mapps. *Journal of Applied Probability*, 38A, 188-201.

. Brillinger, D.R., Morettin, P. A., Irizarry, R. and Chiann, C. (2000). Some wavelet-based analysis of Markov data. *Signal Processing*, 80, 1607-1627.

. Sáfadi, T. and Morettin, P.A. (2000). A Bayesian analysis of threshold ARMA models. *Sankhya, Series B*, 62, 353-371.

. Mentz, R. P., Morettin, P.A. and Toloí, C.M.C. (2000). On residual variance estimation in the ARMA (1,1) model. *Estadística*, 53, 1-40.

. Chiann, C. and Morettin, P.A. (1999). Estimation of Time Varying Linear Systems. *Statistical Inference for Stochastic Processes*, 2, 253-285.

. R.P. Mentz, Morettin, P.A. and Toloí, C.M.C. (1999). On least squares estimation of the residual variance in the first order moving average model. *Computational Statistics and Data Analysis*, 29, 485-499.

. R.P. Mentz, Morettin, P.A. and Toloí, C.M.C. (1998). On the estimation of

the residual variance in autoregressive models *Journal of Time Series Analysis*, 19, 187-208.

. Chiann, C. and Morettin, P.A. (1998). A wavelet analysis of time series *Journal of Nonparametric Statistics*, 10, 1-46.

. Sáfadi, T. and Morettin, P.A. (1998). A Bayesian analysis of asymmetric time series. *Brazilian J. of Statistics*, 12, 1-15.

. Morettin, P.A. (1997). Wavelets in Statistics, *Resenhas*, 3, 211-272.

. R.P. Mentz, Morettin, P.A. and Toloi, C.M.C. (1997). Residual variance estimation in moving average models. *Communications in Statistics-Theory and methods*, 26, 1905-1923.

. Morettin, P.A. (1996). From Fourier to wavelet analysis of time series. *Proceedings in Computational Statistics*, 111-122, Physica-Verlag.

## 8. Further Information

. Participated in over 60 national and international meetings, about 30 as invited speaker.

. Published over 60 papers, 8 books and 5 lecture notes.

. Referee for several journals, including *Annals of Probability*, *Annals of Statistics*, *Journal of Time Series Analysis*, *Bernoulli*, *IEEE Transactions on Information Theory*, *Annals of the Institute of Statistical Mathematics*, *Canadian J. of Statistics*, *Transactions of the American Mathematical Society*, *Journal of Forecasting*, *Journal of Nonparametric Statistics*, *Journal of Econometrics*, *Computational Statistics and Data Analysis*, *NeuroImage* and for several international agencies, as NSF, Chilean Research Council, etc.

. Member of the International Statistical Institute, Interamerican Statistical Institute, American Statistical Association, Brazilian Statistical Association and Bernoulli Society.

. Recipient of the "Brazilian Statistical Association Award 2006", for his contributions to the development of Statistics in Brazil.