



INSTITUT FÜR HÖHERE STUDIEN
INSTITUTE FOR ADVANCED STUDIES
Vienna

ECONOMETRICS RESEARCH SEMINAR

November 10, 2011, 9 am

**Institute for Advanced Studies
1060 Vienna, Stumpergasse 56
HS II (lecture room II)**

Please note that the seminar will start at 9 am sharp!

Matthias Koch

Vienna University of Economics and Business

Agent Teams and Evolutionary Computation: Optimizing Semi-Parametric Spatial Autoregressive Models

Classical spatial autoregressive models share the same weakness as the classical linear regression models, namely it is not possible to estimate non-linear relationships between the dependent and independent variables. In the case of classical linear regression a semi-parametric approach can be used to address this issue. Therefore an advanced semi-parametric modelling approach for spatial autoregressive models is introduced. Advanced semi-parametric modelling requires determining the best configuration of independent variable vectors, number of spline-knots and their positions. To solve this combinatorial optimization problem an asynchronous multi-agent system based on genetic-algorithms is utilized. Three teams of agents work each on a subset of the problem and cooperate through sharing their most optimal solutions. Through this system more complex relationships between the dependent and independent variables can be derived. These could be better suited for the possibly non linear real-world problems faced by applied spatial econometricians.

with Tamás Krisztin (Vienna University of Economics and Business)

DOWNLOAD SITE FOR PAPERS (IF AVAILABLE) AND SEMINAR SCHEDULE: <http://economics.ihs.ac.at/seminars>

NOTE: Participation of advanced students in this seminar is highly recommended.



ECONOMETRICS RESEARCH SEMINAR

Manfred Deistler (University of Technology Vienna and IHS), **Robert Kunst** (IHS),
Benedikt Pötscher (University of Vienna and IHS), **Leopold Sögnér** (IHS)

Venue: Institute for Advanced Studies, 1060 Vienna, Stumpergasse 56

Schedule Fall/Winter 2011/2012

UNIT	DATE	ROOM	SEMINAR
1	Thu, Oct 27 9:00 am	HS II	Jerry Hausman , MIT
2	Thu, Nov 03 9:00 am	HS II	Carlos Velasco , Universidad Carlos III de Madrid <i>"Tests for m-dependence Based on Sample Splitting Methods"</i>
3	Thu, Nov 10 9:00 am	HS II	Matthias Koch , Vienna University of Economics and Business <i>"Agent Teams and Evolutionary Computation: Optimizing Semi-Parametric Spatial Autoregressive Models"</i>
4	Thu, Nov 17 9:00 am	HS II	Adam Rosen , University College London
5	Thu, Nov 24 9:00 am	HS II	Genaro Sucarrat , BI Norwegian Business School
6	Thu, Dec 01 9:00 am	HS II	Bernd Funovits , Vienna Graduate School of Economics
7	Thu, Dec 15 9:00 am	HS II	Ulli Schneider , TU Vienna
8	Thu, Jan 12 9:00 am	HS II	Sabyasachi Das , Vienna Graduate School of Economics
9	Thu, Jan 19 9:00 am	SZ VI	Siegfried Hörmann , Université Libre de Bruxelles
10	Thu, Jan 26 9:00 am	HS II	Martin Wagner , Institute for Advanced Studies
11	Thu, Mar 15 9:00 am	HS II	Steven Durlauf , University of Wisconsin-Madison
12	Thu, Mar 22 9:00 am	HS II	Jan G. De Gooijer , Universiteit van Amsterdam
13	Thu, Apr 19 9:00 am	HS II	Michel Dacorogna , SCOR
14	Thu, Jun 21 9:00 am	HS II	Maximilian Kasy , UCLA

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