Max-Planck-Institut für Physik komplexer Systeme

# Winter School on Nonlinear Time Series Analysis

Dresden, Germany • February 11–21, 1998

**Scientific coordinators and lecturers:**


| | | |
|---|---|---|
| **Holger Kantz** | **Daniel Kaplan** | **Thomas Schreiber** |
| MPI für Physik komplexer Systeme | Macalester College | University of Wuppertal |
| Dresden, Germany | St. Paul MN, USA | Wuppertal, Germany |


Nonlinear time series analysis is becoming a more and more reliable tool for the study of complicated dynamics from measurements. The concept of deterministic low-dimensional chaos has proven to be fruitful in the understanding of many complex phenomena, but even where processes are obviously non-deterministic nonlinear methods allow for improved data analysis. Despite wide interest from many disciplines, many potential users of nonlinear time series analysis are not sufficiently familiar with nonlinear methods of data analysis as to guarantee a successful application of these methods. Currently, expertise is concentrated in very few groups worldwide and thus deserves to be shared.

This school will present the necessary background of dynamical systems theory and the relevant aspects of time series analysis. Emphasis is laid on understanding the concepts of nonlinear time series analysis, on learning about algorithmic implementations, and on obtaining experience by application to data. The scientific organisers present lectures covering the background of deterministic dynamical systems and the main topics of linear and nonlinear time series analysis. Guest speakers will discuss more specialised topics, recent developments, or the data analysis of particular systems. Participants will study their own time series or sample data sets in computer exercises accompanying the lectures. There will be opportunity for the participants to discuss their own work.

**Guest speakers include:**

| | | | |
|---|---|---|---|
| Freddy Christiansen | (Dresden, Germany) | Klaus Lehnertz | (Bonn, Germany) |
| Peter Grassberger | (Jülich, Germany) | Lenny Smith | (Oxford, England) |
| Celso Grebogi | (Maryland, USA) | James Theiler | (Los Alamos, USA) |

We expect 20-30 participants from all disciplines, experimentalists and theoreticians at or above PhD level, with sufficient mathematical background. Preference is given to young researchers who are already analysing time series data or plan to do so. Applications for participation should be sent to the address below. Application forms are available upon request or on the conference web page. The registration fee is DM 200. Costs for accommodation and lunch will be covered by the Max-Planck-Institute. In exceptional cases, limited funding is available to partly cover travel expenses.

**Deadline for applications is December 15, 1997.**

---

**For further information and application forms please contact:**
Visitors Program, Max-Planck-Institut für Physik komplexer Systeme,
Nöthnitzer Str. 38, D-01187 Dresden
Tel.: +49-351-871-2105 / Fax: +49-351-871-2199
`tisean98@mpipks-dresden.mpg.de`
`http://www.mpipks-dresden.mpg.de/~tisean98`

---