

Third day

24 June 2010

Scientific programme

- 9.00.- 10.00 L.Pavliška: Installation of R-environment and of gnostic package into participant's computers
- 10.00. – 11.00 P.Kovanic: Gnostic probability and density distributions and their robust parameters
- 11.00 – 12.00 L.Pavliška: Exercise in basic operations in R and using of gnostic package
- 12.00. – 13.00 Lunch
- 13.00 – 14.30 L.Pavliška: Exercises: distribution functions in gnostic marginal analysis of small data samples
- 14.30 – 15.30 P.Kovanic: Gnostic software for robust multi-dimensional analysis
- 15.30 – 16.00 Coffee break
- 18.30 – 21.00 L.Pavliška: Exercises in multi-dimensional analysis
- 18.30 – 21.00 Social event

Fourth day

25 June 2010 Scientific programme

- 9.00.- 12.00 P.Kovanic: Presentation of results of comparisons of different technologies of environmental monitoring and analysis

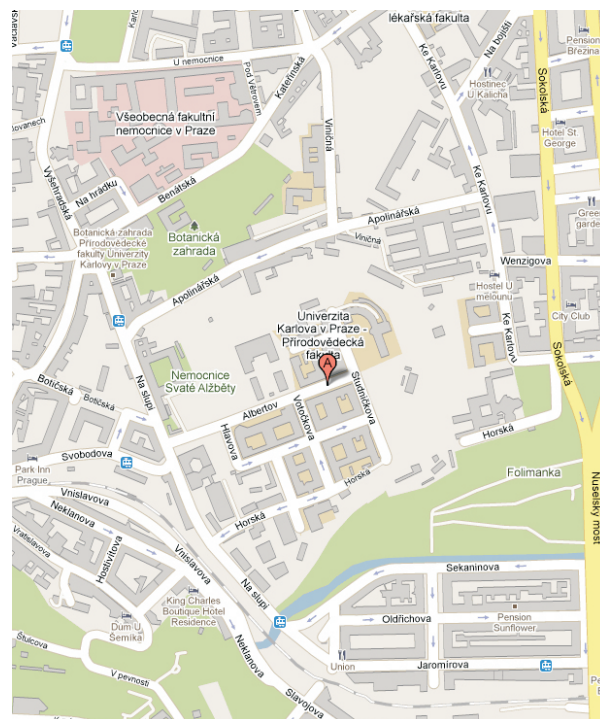
Discussion including and not limited to following aspects:

- 1) Exchange of environmental and health care data
- 2) Help in introducing the gnostic methodology in cooperating laboratories

- 3) Help in analysis of data of cooperating laboratories
- 4) Participation in the initiative aiming to International Inter-calibration of environmental and health-care systems

Closure

12.00. – 13.00 Lunch



Charles University in Prague
Faculty of Science
Albertov 6
Praha 2



EUROPEAN UNION
EUROPEAN REGIONAL
DEVELOPMENT FUND



Summer school on
Gnostic Approach
to Small Sample
Data Analysis

Prague, Czech Republic
22-25 June 2010



Objectives

The Institute of Public Health (Ostrava, Czech Republic) will organize the “Summer school of treatment of small samples of strongly dispersed data” within the framework of the 2-FUN project of the European Union (<http://www.2-fun.org>). The goal of the school is to make available the advanced alternative of data treatment based on the mathematic gnostics, i.e. on the theory of individual uncertain data and small samples briefly characterized in http://www.2-fun.org/download/newsletter4_en.pdf. These methods are being developed in IPH to enable their applications not only by users of the commercial computing environment S-PLUS of the Insightful Co.™ but also on the free software environment of the R-project (<http://r-project.org>) based on the GNU General Public License. The suitability of the gnostic approach for applications results from its specifics:

- 1) No assumptions of statistical models of the data are necessary.
- 2) Gnostic theory warrants maximization of information obtained from results.
- 3) Methods are naturally robust, whereby two kinds of robustness can be chosen:
 - a) Robustness with respect to the peripheral, outlying data.
 - b) Robustness with respect to the central, inlying data and inner noise.
- 4) Non-parametric distribution and density functions are available enabling
 - a) the robust estimation not only of the probability and its density, but also of the finite bounds of the data domains,
 - b) robust testing of the data homogeneity and homogenization of the non-homogeneous data,

- c) estimation of the censored data (data measured below the Limit of Detection , above the range of the scale and of interval data.
 - d) Robust estimating of the correlation coefficients and matrices.
- 5) Robust multi-dimensional (MD-) gnostic methods are suitable for
- a) MD-modeling,
 - b) MD-filtering and prediction,
 - c) Ordering of MD-objects,
 - d) Reliable monitoring of MD-processes.

A complete package of the recently available gnostic software and its necessary documents will be distributed among participants of the school. The program of the school will include not only an introduction into statistical computing, but also exercises in application of gnostic methods. The call for participation is primarily oriented to partners in 2-FUN project and related projects dealing with environmental problems, but interested persons from other fields will be accepted as well till exhaustion of the capacity of the school.

Scientific committee:

P.Kovanic, M.Meloun, T.Ocelka

Organization committee:

Olga Tomoszková olga.tomoszkova@zuova.cz
Tomáš Ocelka tomas.ocelka@zuova.cz

Preliminary programme

First day

22 June 2010

Accommodation, Registration, Party

16.00 - 19.00

Registration

19.00 - 21.00

Welcome party

Second day

23 June 2010

Scientific programme

8.00.- 10.00

Registration

8.45. – 9.00

Welcome remarks, invitation

9.00 – 9.45

M.Meloun: Specifics of small sample statistics

9.45.- 10.30

P.Kovanic: Introduction to gnostic approach to the analysis of small data samples

10.30. – 11.00

Coffee break

11.00 – 11.45

M.Meloun: Statistical computing

11.45 – 12.30

K.Kupka: S-language and S-PLUS environment

12.30 – 13.00

Discussion

13.00.- 14.00

Lunch

14.00 – 14.45.

L.Pavlska: Introduction to R-project

14.45 – 15.30

T.Ocelka: Specific requirements of analysis of environmental data

15.30 – 17.00

P.Kovanic: Gnostic software package and its typical applications

17.00 – 17.30

Discussion

18.30 - 21.00

Social event