Short Self-Introduction and Research Interest

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Short self-introduction

- 1980-1985 *Eötvös Loránd University*, Budapest **Hungary**
  M.Sc in Mathematics

- 1986-1990 *Lomonosov Moscow State University*, Moscow, **Russia**
  PhD in Mathematics (Specialization in Probability theory and Statistics),
  March 31, 1990

- 1991-93 **Postdoctoral fellowship** at *Meijo University*, Nagoya, **Japan**.

- 1990 - to date: Employment in the Department of Probability Theory and
  Statistics of *Eötvös Loránd University*, Professor from 1998

- 1999-2015 **Heading thematic research projects**: funded by DAAD, The British
  Council, the Hungarian NSF (OTKA) or international insurance and finance
  companies (ING, AEGON, GENERALI, Morgan Stanley). Co-operative
  partners: Universities of Dortmund, Germany, Leeds, and Nottingham U.K.

- Organisation of two large scale conferences EMS2013 and IWAP2018

- On the Educational Committee for Financial and Actuarial Mathematics

Membership in professional bodies and awards

- **ISI** - International Statistical Institute - *elected* member 2011 - to date
- **Bernoulli Society** for Probability Theory and Statistics 1990 - to date,
    - **European Committee** of the Bernoulli Society, elected member 2008-2014
        Chair 2010-2012
- Hungarian Statistical Association - 2002-to date
- **INTECOL** - Society for International Ecological Sciences 1998- to date,
- ENBIS - European Network of Business and Industrial Statistics 2006- to date,
- ASMDA - Applied Stochastic Models and Data Analysis Society 2007- to date,
- HU-MATHS-IN 2007- to date Scientific Committee member 2013- to date,
- **Fulbright** Lecturing and Research award 2019, University of Connecticut USA

Find my CV with some pubications (updated in 2015) at
https://web.cs.elte.hu/probability/markus/EURO_CV_LaszloMarkusENG2015.htm
The full list of publications is available at
https://m2.mtmt.hu/gui2/?type=authors&mode=browse&sel=10006452

Research interest

My research fields:

**Environmental Statistics and Mathematical Finance**

Topics:

- Discrete and continuous time dynamics of random (stochastic) processes
- Interdependence/association of temporal and spatial random phenomena
- The effect of interdependence/association on distribution
- The effect of interdependence/association on extremes

Research interest

Modelling river networks and river discharge dynamics

- River discharge dynamics
  - Time Series Analysis
  - Non-linear (Modified GARCH) modeling
  - Long memory
- River-Groundwater interaction
  - Time Series Analysis
  - Dynamic Factor Analysis

Research interest
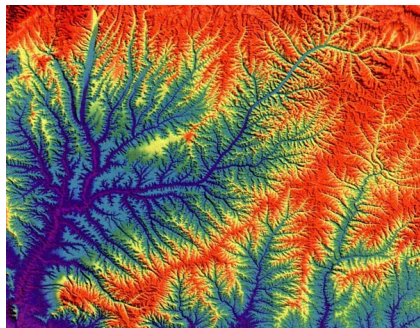
Flood risk estimation

- Discharge maxima, flood volume, flood duration

    - Extreme Value Analysis

    - Tail dependence

    - Copula models

- Portfolio Analysis for Insurance Companies

    - Reliability estimation

Research Interest

Modelling groundwater migration and discharges of karstic springs

- Selecting recharge and discharge areas

    - Detection of latent effects

    - Dynamic Factor Analysis

- Assessing aquifer vulnerability

    - Dynamic Factor Analysis

    - Kriging of maps

- Aquifer structure and complexity

    - Fractal and Multifractal analyses

    - Clustering springs by aquifer complexity
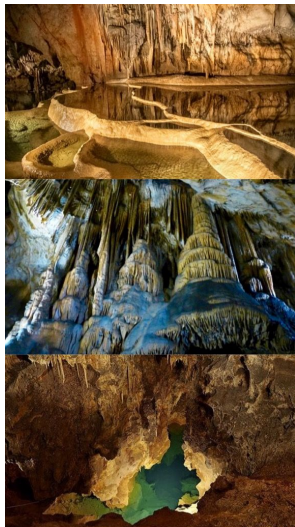
How can I be useful for a project?

- The abundance of environmental data often doesn't go hand in hand with sophisticated data analysis – at this point, my experience can come handy.

  Experience in

- team working
- communication with researchers of different disciplines
- model building
- solving mathematical and statistical problems
    - Advanced statistical analyses
    - Description of propagation of random phenomena
    - Revealing and describing interdependence structures
    - Identification of latent effects
    - Complexity analysis
    - Segmentation of observations or objects by observed characteristics
    - Application of AI techniques for system identification and parameter estimation

Thank you for your attention!