

Thematic Doctoral Programme
„Modeling-Analysis-Optimization of discrete continuous and stochastic systems“
Founding Declaration

Decision

According to this founding declaration and in accordance with **§ 19 paragraph 4c, part B** of the statutes of Alpen-Adria-Universität¹ the Thematic Doctoral Programme „Modeling-Analysis-Optimization of discrete continuous and stochastic systems“ will be established as from the 2016/17 academic year.

Faculty members (potential supervisors)

- Prof.ⁱⁿ Dr.ⁱⁿ **Erika Hausenblas** (Montanuniversität Leoben)
- Prof. Dr. **Clemens Heuberger** (Institute for Mathematics)
- Prof.ⁱⁿ Dr.ⁱⁿ **Barbara Kaltenbacher** (Institute for Mathematics)
- Prof. Dr. **Jürgen Pilz** (Institute for Statistics)
- Prof. Dr. **Christian Pötzsche** (Institute for Mathematics)
- Prof.ⁱⁿ Dr.ⁱⁿ **Elena Resmerita** (Institute for Mathematics)
- Prof. Dr. **Franz Rendl** (Institute for Mathematics)
- Prof. Dr. **Gunter Spöck** (Institute for Statistics)
- Prof.ⁱⁿ Dr.ⁱⁿ **Angelika Wiegele** (Institute for Mathematics)

Speaker

Univ.-Prof.ⁱⁿ Dipl.-Ing.ⁱⁿ Dr.ⁱⁿ **Barbara Kaltenbacher**

M: barbara.kaltenbacher@aau.at

T: +43 463 2700 3120

Academic degree

Dr. techn.

Duration of studies

3 years

Language of instruction

English

Profile

The goal of this thematic doctoral programme (DP) is to enhance, on the level of doctoral training, the combined knowledge in the mathematical fields of differential equations, optimization, discrete mathematics, stochastics, and inverse problems, as required to successfully tackle research and application challenges posed by systems exhibiting discrete, continuous and stochastic aspects.

To provide a common basis for all doctoral students that enables mutual understanding and interaction, we provide an adaptation module consisting of complementary master courses in the areas of the DP not covered in the mathematical training of the doctoral students so far. An essential part of the advanced training of the doctoral students in this DP consists of special lectures that will, as a rule, be provided jointly by two or more faculty members. The main pillar of the training consists in independent and collaborative scientific work supervised by the faculty members. The weekly DK Seminar (https://www.math.aau.at/mso/?page_id=272) is crucial for monitoring the progress and informing on results of this work as well as for initiating cooperations.

¹ See the relevant statutory provision in: Mitteilungsblatt, 6. Stück, issued on 16.12.2015 (Beilage 3, <https://www.aau.at/universitaet/service-kontakt/mitteilungsblaetter/mitteilungsblaetter-2015-2016/>)

Research areas

- analysis of stochastic systems
- regularization methods
- qualitative and numerical analysis of dynamical systems
- nonlinear and combinatorial optimization
- optimization and analysis of discrete structures
- Bayesian spatio-temporal prediction and design
- parameter identification

Admission prerequisites

- Master in Mathematics at some national or international university
- admission to Doctoral Studies of Technical Sciences at AAU
- confirmation of supervision by a member of the doctoral programme

Graduation Requirements

- performance record (compatible with the rules of the doctoral study in technical sciences "Dr. techn." at the AAU): altogether 16-32 ECTS containing the following:
 - research dominated part: 8 ECTS DK seminar plus 3 ECTS Privatissimum
 - training dominated part: 0-5 ECTS adaptation module plus 5-10 ECTS special lectures
- active participation (poster or oral presentation) in at least two international conferences
- two accepted or positively reviewed papers in international refereed journals or conference proceedings; alternatively, two positive international reviews of the thesis;

Admission Procedure

For the admission to the doctoral programme the current curriculum for doctoral studies of Alpen-Adria-Universität Klagenfurt has to be taken into account.

Applicants send:

- documents (certificates, letter of motivation and/or evidence of skills in two or more of the research fields of this DP)
- envisaged dissertation topic
- supervision commitment by one of the faculty members of the DP

to the contact address below.

The decision about admission (after a hearing) will be taken jointly by the faculty members of the doctoral programme.

The admission of current PhD students from the ongoing Karl Popper Kolleg MSO is possible without this procedure.

Deadlines

Applications from prospective doctoral students for winter semester 2016/17 will be accepted until July 30, 2016.

Contact

Senka Omerhodzic

M: Senka.Omerhodzic@aau.at

T: +43 463 2700 3126