

# Chapter Highlights

Charles University in Prague Chapter of SIAM

June 22, 2016

## I'm gonna write my thesis in L<sup>A</sup>T<sub>E</sub>X

It has become a tradition for our chapter to organize peer-to-peer courses. Last year we held a course in FEniCS and this year we repeated introduction to Matlab we had two and four years ago. Over the years, it has come to our attention that undergraduate students also often struggle with L<sup>A</sup>T<sub>E</sub>X typesetting, especially when working on a more complex project such as a bachelor's thesis. Therefore, we decided to share our knowledge (which is also our motto) and organized a one-day intensive course called 'I'm gonna write my thesis in L<sup>A</sup>T<sub>E</sub>X'.

In this one day, we covered basic topics such as document structure, text formatting, mathematical formulas, tables and figures, and also a brief introduction to BibT<sub>E</sub>X. The whole course involved a lot of independent work, in which the students worked on texts from their fields, with the opportunity to discuss their questions. The last part of the course was devoted to the actual official template for the bachelor's thesis so that at the end, students left the course with a working L<sup>A</sup>T<sub>E</sub>X file ready to be filled with the results of their bachelor's research.

Since we were able to attract students from various fields of mathematics, we found this workshop also a great opportunity to promote other Chapter activities to undergraduate students.



## Introduction to Programming in Matlab

As in the academic years 2011/12 and 2013/14 the students and Chapter members Marie Kubinova and Jan Papez organized a five-day intensive programming course 'Introduction to Programming in Matlab', which was organizationally and financially supported by our Chapter and the Faculty of Mathematics and Physics. The aim of the course was to give a brief introduction to the programming in MATLAB with emphasis on how to solve common problems in a clever way. After five days, the participants should be able to write and run the experiments required for their projects and theses. The organizers make use of their own experience — they believe that the workshop helps to avoid the inefficient trial-and-error learning. This year, the workshop had 12 participants, mostly last-year undergraduate students. Since this course is relatively unique at universities in Prague, it attracted also doctoral students from University of Chemistry and Technology. This shows that Chapter activities may be attractive for students of various fields.

## Field Trip to ELLA-CS

Our Chapter, with the help of Career Center for Graduates of the Faculty of Mathematics and Physics, organized a field trip to ELLA-CS in Hradec Králové. ELLA-CS is a purely Czech manufacturer of stents and other health care devices. At the headquarters, we were given a series of short presentations about the company, their products and research. We could also hold in hands and investigate various stents they produce. The second part consisted of excursion to one of the laboratories. The bus ride to the headquarters and back was also a great opportunity for the committee and the students to catch up.

Travel expenses to Hradec Králové and back were covered by the Career Center for Graduates.



## Seminar SIAM SC

We have held a regular seminar since the foundation of the Chapter. This year we had eight speakers (see the list of the speakers and the titles below). The seminar is attended mostly by students from study programs Mathematical and Computer Modeling in Physics and Engineering, and Numerical and Computational Mathematics. However, it is not uncommon that the topic attracts also faculty and students of physics or computer science.

Similarly as in the last year, each seminar was concluded by a pizza and a discussion, not restricted to a preceding talk. We hope that the seminar serves not only as a place to present and attend interesting talks from various fields, but also as a place to meet with other students.

- **Marek Netušil** (Charles University in Prague) – Homogenization for Dummies
- **Petr Kočí** (University of Chemistry and Technology Prague) – Mathematical Models of Automotive Exhaust Gas Catalysts
- **Peter Franek** (The Czech Academy of Sciences) – Verification of Zeros of Continuous Functions that Are Known Only Approximately
- **Petr Petráček** (Charles University in Prague) – Locally Recurrent Functions, Density Topologies and Algebrability
- **Petr Vágner** (Charles University in Prague) – Pitfalls of Exergy Analysis
- **Helena Švihlová** (Charles University in Prague) – Modeling of Flow in Stenotic Valves
- **Marek Netušil** (Charles University in Prague) – Arteries - All Models Are Wrong but Some Are Useful
- **Michal Outrata** (Charles University in Prague) – CNW Equilibria