The EMS Publishing House – a crown jewel of the Society

European Mathematical Society Publishing House

The idea had already been around for a while when Rolf Jeltsch, at that time president of the EMS, announced plans for a publishing house of the EMS in his speech at the closing ceremony of ECM 2000 in Barcelona. One motivation was that mathematicians had started to suffer from the ever increasing subscription fees for journals from commercial publishers. Indeed the community was, and actually still is, confronted with an almost surreal situation: how can it be that a mathematician who not only does the research but who also produces the LaTeX files, referees articles and does editorial work for a journal does not find that very same journal with his own articles in his university's library? Because the subscription fees became unaffordable! The desire to have a publisher who really knew the needs of the mathematical community, who was a partner and whose primary interest was not to satisfy the shareholders but to make science available to the mathematical community, became manifest.

Given this situation, what could be better than a publishing house that belongs to the mathematicians to break the monopoly of commercial publishers? And this idea finally came to fruition in 2001: in order to operate its own publishing house, the EMS created the European Mathematical Foundation, which is, by definition, a not-for-profit corporation. The proceeds from the sale of the publications are used to keep the Publishing House on a sound financial footing. A positive annual account goes back to the mathematical community in compliance with the statutes of the foundation (see www.ems-ph.org/about.html). The prices of the products are set as low as is practicable in the light of the mission and market conditions. This mission of the EMS Publishing House is straightforward: it publishes high-quality peer-reviewed journals and high-quality books, on all academic levels and in all fields of pure and applied mathematics.

At a memorable meeting of the Swiss Mathematical Society in 2004, after hours of heated discussions, it was finally decided to move the two journals of the Society, the *Commentarii Mathematici Helvetici* and the *Elemente der Mathematik*, from Birkhäuser to the EMS Publishing House. This decision was dolorous since Birkhäuser had been a reliable partner with a reasonable price policy for many decades. Moreover, a very generous counteroffer of Birkhäuser stood against the potential risk that the EMS Publishing House might not flourish and prosper. However, the feeling to seize the chance to consolidate the EMS Publishing House by this move and to set a sign by doing the right thing for mathematics on a European scale was stronger than local myopic and pecuniary arguments.

Let me emphasise that even after the move, Birkhäuser has always had an open ear and a helping hand for the Swiss mathematical community. Just to mention a few examples, Dr. Sven Fund, managing director of Birkhäuser, and Dr. Thomas Hempfling, editor for mathematics, physics and computational sciences, have supported the creation of the Swiss Digital Mathematics Library (www.math.ch/dml) and have sponsored a prize for young mathematicians in the Swiss Doctoral Program in Mathematics (www.math.ch/dp). This year's Euler-Comic has been produced by Birkhäuser at preferential conditions. Also the transition of the two journals from Birkhäuser to the EMS Publishing House was handled very professionally and went smoothly. The lists of subscribers and the back volumes changed hands quickly, and the editorial offices of both journals worked well together with the new publisher from the first moment onward.

The EMS Publishing House has been built up by Dr. Thomas Hintermann, himself a fine mathematician and a student of Herbert Amann. It is tremendous the way he has created, basically single-handedly, an efficiently running publishing house out of nothing in only a period of a few months. I have rarely seen somebody working so hard. Having this man was a stroke of fortune for the EMS. The Society owes him a lot! In 2005 Dr. Manfred Karbe joined the venture and he is responsible for the publication program of the EMS Publishing House.

Publishers Hintermann and Karbe presenting their products during ICM 2006

There are numerous factors that the Swiss Mathematical Society appreciates in its collaboration with the EMS Publishing House: the possibility to actively participate, to take part in the decision-making and to profit from Thomas Hintermann's long-lasting professional experience. The price of the journals is set by mutual agreement between the Society and the Publishing House. The accounting, as well as the management of the lists of subscribers, is completely transparent. The design of the cover was also decided jointly. The EMS Publishing House helped whenever help was needed. For example, flexible financing schemes for the transition costs or exceptional secretarial costs, implementation of a plan to serve developing countries with free copies of our journals, and realisation and maintenance of the Swiss Digital Mathematics Library.

It goes without saying that the quality of the printing and the material meets the highest professional standards. It just feels good to browse through a journal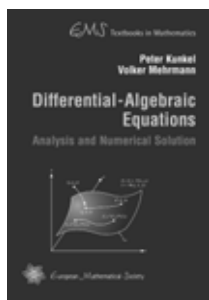 or book produced by the EMS Publishing House. Today it publishes a selection of distinguished journals, books and book series (see www.ems-ph.org). At present, scientific publishing is in motion worldwide. Quite a number of journals are changing their publisher or are considering this option. Everywhere, people are calling for a publishing house that belongs to the mathematicians. But hey, we have one: the EMS Publishing House!

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European Mathematical Society Publishing House

Peter Kunkel (University of Leipzig, Germany) and Volker Mehrmann (TU Berlin, Germany)
Differential-Algebraic Equations. Analysis and Numerical Solution
ISBN 3-03719-017-5. 2006. 385 pages. Hardcover. 16.5 cm x 23.5 cm. 58.00 Euro

Differential-algebraic equations are a widely accepted tool for the modeling and simulation of constrained dynamical systems in numerous applications, such as mechanical multibody systems, electrical circuit simulation, chemical engineering, control theory, fluid dynamics and many others.

This is the first comprehensive textbook that provides a systematic and detailed analysis of initial and boundary value problems for differential-algebraic equations. The analysis is developed from the theory of linear constant coefficient systems via linear variable coefficient systems to general nonlinear systems. Further sections on control problems, generalized inverses of differential-algebraic operators, generalized solutions, and differential equations on manifolds complement the theoretical treatment of initial value problems. Two major classes of numerical methods for differential-algebraic equations (Runge-Kutta and BDF methods) are discussed and analyzed with respect to convergence and order. A chapter is devoted to index reduction methods that allow the numerical treatment of general differential-algebraic equations. The analysis and numerical solution of boundary value problems for differential-algebraic equations is presented, including multiple shooting and collocation methods. A survey of current software packages for differential-algebraic equations and a short outlook on current research topics complete the text.

The book is addressed to graduate students and researchers in mathematics, engineering and sciences, as well as practitioners in industry. A prerequisite is a standard course on the numerical solution of ordinary differential equations. Numerous examples and exercises make the book suitable as a course textbook or for self-study.

Markus Stroppel (University of Stuttgart, Germany)
Locally Compact Groups
ISBN 3-03719-016-7. 2006. 312 pages. Hardcover. 16.5 cm x 23.5 cm. 52.00 Euro

Locally compact groups play an important role in many areas of mathematics as well as in physics. The class of locally compact groups admits a strong structure theory, which allows to reduce many problems to groups constructed in various ways from the additive group of real numbers, the classical linear groups and from finite groups. The book gives a systematic and detailed introduction to the highlights of that theory.

In the beginning, a review of fundamental tools from topology and the elementary theory of topological groups and transformation groups is presented. Completions, Haar integral, applications to linear representations culminating in the Peter-Weyl Theorem are treated. Pontryagin duality for locally compact Abelian groups forms a central topic of the book. Applications are given, including results about the structure of locally compact Abelian groups, and a structure theory for locally compact rings leading to the classification of locally compact fields. Topological semigroups are discussed in a separate chapter, with special attention to their relations to groups. The last chapter reviews results related to Hilbert's Fifth Problem, with the focus on structural results for non-Abelian connected locally compact groups that can be derived using approximation by Lie groups. The book is self-contained and is addressed to advanced undergraduate or graduate students in mathematics or physics. It can be used for one-semester courses on topological groups, on locally compact Abelian groups, or on topological algebra. Suggestions on course design are given in the preface. Each chapter is accompanied by a set of exercises that have been tested in classes.