

WAVELETS AND MATLAB

A workshop on *Wavelet Analysis with MATLAB* will take place at Northumbria University from 19 to 21 December 2011. The aim of this workshop is to introduce wavelets as a tool for data analysis for a number of applications such as signal and image processing, communication systems, engineering, mathematics, computing, physics, biology medicine and finance. The workshop will cover the mathematical background of wavelet analysis and will introduce examples of 1D and 2D discrete and continuous wavelet transforms with applications.

The introduction to *Wavelet Analysis with MATLAB* will be on Tuesday 20 December 2011 from 10.00 to 17.00. The workshop will be presented as a mixture of lectures and laboratory sessions for approximately six hours per day. The laboratory sessions will require the participants to have a working knowledge of MATLAB.

Advanced sessions for those already familiar with Wavelet will be held on Wednesday 21 December 2011 from 10.00 to 17.00.

For participants not familiar with MATLAB, there will be a half-day course on the MATLAB on Monday 19 December between 14.00 and 17.00.

Participants with knowledge of MATLAB may wish to attend the Tuesday and Wednesday sessions only.

Registration deadline is **10 December 2011**. The registration fee for the entire workshop is £300, the two-day workshop is £250 (Wavelet basics and advanced) and for a single-day workshop £150 (Wavelet basics or advanced). The registration fee covers handouts for the workshop, use of MATLAB toolboxes, lunches and refreshments.

For further information visit the website at <http://group28.northumbria.ac.uk> or contact Dr Sujan Rajbhandari (tel: 0191 227 3901, email: sujan.rajbhandari@northumbria.ac.uk).

REVIEWS

On Gauss and Cows

Carl Friedrich Gauß: Biographie und Dokumente by Hans Wußing, 2011, EAGLE 051 Leipzig, 279 pp, €26.50, ISBN 978-3-937219-51-6.

This book first appeared in 1974 in a series of popular short biographies of major scientists published by the Leipzig house Teubner. It consisted of ten chapters that ran efficiently through the main features of the life and especially the work of its subject, and ended with a timeline and a bibliography, mostly of historical literature. It was reprinted four times, to 1989; but this edition is substantially different. The chapters read more or less as before, but the text contains far more illustrations, especially likenesses of Gauss and others, and title pages of some publications and manuscripts.

The first main change is the addition of 25 short 'documents' concerning 'Gauss in his intellectual and private circumstances'. The author, often quoting contemporaries or historians, writes several of them; the rest are passages photoreproduced from historical writings, ending with one by the author.

The second change is a further 25 documents on contacts between Gauss and Teubner, prepared in part to celebrate in 2011 the bicentenary of the house. Although they did not publish Gauss's own books, they dominated the publication of Gauss scholarship, which began soon after his death in 1855. Gauss's compatriots produced a fine edition of his *Werke* in 12 large volumes between 1863 and 1933, including many manuscripts as well as his publications (which are far more numerous than is suggested by his famous conceit '*paucis sed matura*'). Large supplements to volumes 10 and 11 constituted (some reprints of) articles and monographs on aspects of his work that were produced in a project directed by Felix Klein. In addition, there have been editions of the main (and massive) correspondences with

major colleagues, especially with astronomers. Some of these texts came out from another Leipzig house, Engelmann, including several Gauss items in their important series of source books 'Ostwalds Klassiker', as is duly noted in 20 pages of reproduced title pages of 'Leipzig reference books'. Since 1962 the *Gauss Gesellschaft* has published a useful series of slim *Mitteilungen*. All of this distinguished historical scholarship is at least noted bibliographically in this sequence of 25, much of which is little known to those Gauss enthusiasts who do not read the language; again some short passages from historical texts are photo reproduced.

This half-century of additions more than doubles the length of the book; while the order somewhat resembles a random walk, much useful information on Gauss is made available. The book ends with illustrations of Gauss, especially in stamps (where the author draws upon his own splendid collection for sciences and scientists), banknotes, coins, medals in Gauss's honour, and statues, and the lifeline. One hopes that someone will be inspired to draw upon all these resources and produce or edit the definitive Big-Book(s) biography that Gauss deserves.

The preface of this book is dated February 2011; as is noted on the next page, Wussing died in April after a long fight against cancer. A leader of the history of science in the German Democratic Republic for decades, he was also a major figure in the history of mathematics, receiving the May Medal in 1997 for his services to the field. He was also a substantial author in the popularisation of science and especially mathematics; for example, this book was one of several that he contributed to Teubner's series.

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Cows in the Maze and other mathematical explorations by Ian Stewart, 2010, Oxford University Press, 320 pp, £8.99, ISBN 978-0-19-956207-7.

Cows in the Maze is a collection of 21 articles from the author's Mathematical Recreations column in *Scientific American* magazine. As one might expect, they are pitched at the intelligent, but not necessarily mathematically educated, reader.

The articles cover a variety of topics, most of them well within the traditional scope of "recreational mathematics", but none the worse for that. The stock-in-trade of the genre (from knots to knight's tours, and magic squares to tilings) is all present, but the exposition here is outstanding, and in many cases the author finds a new slant to interest even those familiar with the basic ideas. For example, while the counterintuitive consequences of Bayes' theorem have been covered many times before, the presentation here features a fascinating discussion of its implications in the legal world, with well-researched reference to real-life cases.

Three articles in the middle of the book make a detour into theoretical physics, forming a short(ish) story in which the characters discuss the possibility of time travel in a relativistic universe.

