

# Proceedings of the sixty-third European Study Group Mathematics with Industry

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# Preface

These proceedings contain the results that have been obtained during the Study Group Mathematics with Industry, which was held at the University of Twente in the Netherlands from January 28th until February 1st, 2008. During such Study Group weeks, mathematicians and other people with a strong interest in mathematics work on a several problems that have been formulated by industrial partners. The idea being that the participants try to solve these problems during one week with mathematical techniques.

In 2008 there were 78 participants from various countries, who together attacked six problems. These varied from problems on larger scales, such as the optimal arrangement of trains and large sensor networks, the modeling of aluminium alloys, and the drainage of rain water, to two problems on much smaller scales, one of which involved neurons in the brain and the other one mobile phone electronics. The reader will notice when studying the articles that substantial progress has been made on all problems and in some cases concrete solutions have already been proposed.

These scientific proceedings are accompanied by a separate booklet in Dutch, in which the results have been described for a wider non-scientific audience by journalist Bennie Mols.

It is a pleasure to take the opportunity to thank the sponsors of the Study Group for their generous donations. STW and NWO, our main sponsors, have been financing these events for many years and their continued support is very much appreciated. The research institutes CTIT and IMPACT, both part of the University of Twente, also contributed substantially. The CWI in Amsterdam has again sponsored the printing costs of these proceedings.

In closing, we thank all the participants for their outstanding contributions to an inspiring week of industrial mathematics.

The organization of SWI 2008,

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