

ECMI Special Interest Groups

Collaborative research on selected topics

What is an ECMI SIG

Special Interest Groups (SIGs) promote collaborative research on specific topics in Mathematics for Industry within Europe. A particular aim is to enable researchers (from both academia and industry) with similar interests to get together, have meetings, discuss the topic in-depth, and submit proposals for funding to the European Union or to other funding bodies. ECMI can act as a catalyst in the formation of such a group by offering advice about the expertise available within Europe, by posting information on the web pages and by circulating information about events to all members. ECMI also offers a small amount of support (currently 2000 euros) towards setting up a new SIG and organising a kick-off meeting. Discussions are currently on-going to provide financial support for additional events in a competitive annual call.

Current SIGs are investigating topics in

(IN BRACKETS THE MAIN ORGANISERS)

- ▶ Shape and Size in Medicine, Biotechnology and Materials Science (Luis Bonilla, Jesus Angulo)
- ▶ Liquid Crystals, Elastomers and Biological Applications (Apala Majumdar, Nigel Mottram)
- ▶ Math for the Digital Factory (Dietmar Hömberg)
- ▶ Numerical Weather Prediction (András Bátkai)
- ▶ Computational Finance (Matthias Ehrhardt , Jan ter Maten)
- ▶ Sustainable Energies (Andreas Munch, Barbara Wagne)
- ▶ Advancing the Design of Medical Stents (Sean McGinty)
- ▶ Slow Granular and Multiphase Flows (Stephen O'Brien)
- ▶ Net Campus for Modeling Education and Industrial Mathematics (Dietmar Hömberg, Thomas Götz, Matti Heiliö)
- ▶ Mathematics for Big Data (Natasa Krejic, Alessandra Micheletti)

The level of activity of these SIGs varies; in the ECMI Annual Reports of recent years, one can read about the scope and activities of the above special interest groups. Ideally, a special interest group is an active community that, together, addresses the challenges in the SIG area, has regular meetings, organizes workshops, grows by spreading the news and generate interest by new participants, including also industrial partners. Furthermore, a SIG should be a cradle for European projects, so that the research can be carried out with ample funding and progress in desired directions.

As an example, we would like to mention the most recently set up special interest group, namely the SIG on Mathematics for Big Data. It was set up in 2016, and organized a nice first event in the form of a workshop with many participants in Novi Sad, Serbia, May 31-June 1, 2017 (<http://ecmiindmath.org/2017/03/28/workshop-mathematics-for-big-data/>). The next activity was to write a proposal for a European Industrial Doctorate project, which was submitted in January 2018, and recently the news that it is approved was obtained. Hence, the SIG will be able to perform research together, with 8 PhD students paid by the Marie-Sklodowska-Curie program, for a period of 4 years. Hence, this SIG is an example of how a SIG can be run successfully, and how big challenges in industry and society can be tackled together with several ECMI nodes.

How to apply and set up a SIG

Any ECMI node can apply for setting up a SIG: describe the area of interest, the motivation and aims. There should be a clear interest in the activity from industry. If possible describe how the activity may lead to proposals for cooperative funding. Identify a group of experts for an initial start-up group. These experts should come from more than one country in Europe and should include representative(s) from industry. In addition, describe potential activities for the first year. These might include workshops, industry days, minisymposia etc. The proposal should also nominate a contact person (moderator) who will be responsible for the programme of events and for reporting activities. ECMI's Research and Innovation Committee (RIC) is monitoring SIGs, and also assesses the proposals for new SIGs. An annual report is required which will be posted on the webpages.

Applications should be sent to the Chairman of the Research and Innovation Committee (W.H.A. Schilders). The RIC will decide whether to create a new ECMI SIG.

Call for new Special Interest Groups

Please use this ECMI conference to discuss challenges with colleagues, and come up with ideas for new special interest groups. As can be read on the web page of ECMI's RIC, we have identified 8 specific high-level topic areas where SIGs can be defined. These are in agreement with technology platforms available in Europe. Your SIG should preferably fit within one or more of these areas. Apart from this, there are no constraints, and so we encourage everybody to actively think and use this possibility to bring Europe forward!