

ECCOMAS YOUNG INVESTIGATORS COMMITTEE (EYIC)

2nd meeting, held at ECCOMAS 2012, Tuesday, September 11, 2012
Room M-PE Sem 1, Ground Floor of Main Building of University of Vienna, Austria

MINUTES

contact Bernhard.Pichler@tuwien.ac.at in case of questions

Attending members of EYIC (8/16): Marino ARROYO, Stephan BORDAS, Demirkan COKER, Ludovic CHAMOIN, Stefan LÖHNERT, Bernhard PICHLER, Alessandro REALI, Oliver RÖHRLE

Guests (2): Federica DAGHIA (France), Robertt VALENTE (Portugal)

The meeting starts at 18h33. The agenda of the meeting and minutes of the last meeting are approved. The following discussions result in information and conclusions summarized next:

Aims and activities of EYIC

The mission of EYIC is to *promote young investigators* (younger than 40 years) and to *support ECCOMAS*

- by organizing scientific events at ECCOMAS conferences and
- by reviewing submissions for ECCOMAS committees.

Organization of scientific events particularly includes

- Applications for and organization of the ECCOMAS Young Investigators Conferences (YIC) involving a continuous development of new, innovative, and creative formats
- Dissemination of information on the ECCOMAS PhD Olympiads
- Organization of mini-symposia at ECCOMAS conferences

Reviewing of submissions particularly includes

- Reviewing contributions submitted to ECCOMAS PhD Olympiads
- Reviewing submissions to best-presenter-awards at YICs
- Reviewing of manuscripts submitted for possible publication in the Journal "Computer Assisted Methods in Engineering Sciences", published under the auspices of ECCOMAS (since 2012)

Age restrictions do not apply for committee members, as long as they are active according to the points given above.

Young Investigators Conference (YIC)

The YIC represents a new series of scientific ECCOMAS events, bringing together young researchers and PhD students working in computational science and engineering. Although the title of the event explicitly refers to young scientist (under 40 years of age), participation of senior scientists is considered to be very useful. The first YIC was held (in a still rather classical meeting format) with more than 100 participants from April 24-27, 2012 in Aveiro/Portugal (contact: A. Gil Andrade-Campos, gilac@ua.pt). The next YIC will be held in the week from September 16-20, 2013 in Bordeaux/France (contact: L. Chamoin, chamoin@lmt.ens-cachan.fr). Starting with this 2013 meeting, YICs will be organized every two years (2013, 2015, 2017, and so on). M. Jabareen communicated via e-mail his interest in submitting a proposal for YIC 2015 at Technion/Israel. Related submission guidelines and deadline are not yet known. B. Pichler will ask the ECCOMAS president for this information and disseminate it among the committee members.

PhD Olympiad

ECCOMAS PhD Olympiads are rather new scientific events organized every year, aiming at presenting the best PhD theses approved by a University or Research Organization in Europe during the previous year, and acting as a forum for exchanging new ideas, disseminating recent developments in the fields of ECCOMAS, and sharing common research interests among young investigators. Every affiliated National or Regional Association of ECCOMAS is represented by a number of selected PhDs submitted for consideration for the two ECCOMAS PhD Awards. The first PhD Olympiad took place during the 7th GRACM International Congress on Computational Mechanics, June 30 – July 2, 2011 in Athens/Greece. The second PhD Olympiad took place

during the 1st Young Investigator Conference, April 24-27, 2012 in Aveiro/Portugal. The third PhD Olympiad is expected to take place at the 2nd Young Investigators Conference, September 16-20, 2013 in Bordeaux/France.

EYIC roster

Eight out of 24 associations of ECCOMAS have not yet nominated EYIC members: BNCM (Belgium), FMS (Finland), ISSEC (Ireland), NMC (Netherlands), NOACM (Nordic), ONIV (Russia), PACM (Poland), and SIMAI (Italy). B. Pichler will write to the ECCOMAS president and ask him to contact the decision makers of the associations in order to inquire about the current status of their nomination procedures.

EYIC member profiles

Every EYIC member will be asked to prepare a one-page member profile, highlighting, name, position, affiliation, career milestones, research topics entered so far, frequently used methods, and a selection of recent publications. These profiles are expected to *support interaction* between committee members as well as to *increase awareness of committee member competences* in other ECCOMAS committees. This is detailed next:

- Member profiles will be distributed among all committee members, raising awareness of research interests of other members. This is expected to support inner-committee interaction, in general, and the creation of new teams of session organizers at ECCOMAS conferences, in particular.
- The profiles will also be sent to members of other ECCOMAS committees who are frequently selecting knowledgeable reviewers. This includes
 - the editor, associate editors, and members of the advisory editorial board of the Journal “Computer Assisted Methods in Engineering Sciences”, published under the auspices of ECCOMAS, see <http://cames.ippt.gov.pl>
 - the ECCOMAS committee awarding the winners of the PhD Olympiads

Brainstorming regarding new formats for Young Investigator Conferences

Organizers of YIC 2013 in Bordeaux/France were informed by the ECCOMAS president that the EYIC is expected to come up with new, creative, and innovative formats. Therefore, points discussed during the last EYIC meeting were briefly re-iterated (see minutes of last meeting), followed by a brainstorming delivering the following ideas:

Ideas to further increase attractiveness of YICs and PhD Olympiads

- *Young Investigators Sessions at big ECCOMAS conferences*: Winners of PhD Olympiads and best presenters at YIC (i.e. a well selected group of young researchers) could be invited to present their work prominently at main ECCOMAS conferences, e.g. under the name “Upcoming Young Investigators Session”. This session should be specifically announced (advertised) prior to the meeting in order to increase awareness.
- *Mentoring Session*: Similar to the open-table-discussion organized at YIC 2012, this session should be provided by experienced researchers willing to guide younger colleagues, to answer questions and to provide ad hoc help, not only in specifically scientific subjects, but also related to career questions. This should be combined with a perspective to establish ongoing relationships of learning, dialog, and challenge.

Ideas for YIC: abstracts, full papers, number of presentations per participant, time for presentation

- *Mandatory 2-page extended abstracts, optional full papers*: Given the continuously decreasing relevance of proceedings papers, it was discussed to ask participants of YICs mandatorily for extended 2-page abstracts while full papers should be only optional. Word and LaTeX templates should be provided.
- *No special issue*: It was discussed that papers of PhD Olympiad winners and best presenters at YIC could be published in a special issue. However, because of the foreseen problems listed in the sequel, the idea was considered not to be practical.
 - Presentations at YICs typically include (at least partially) published work such that an invited follow-up paper typically would deal (in order to be original) with a topic somewhat deviating

- from what has been presented.
- As to assure high quality of the special issue, a regular review process is mandatory – if the paper is good enough to be published in the special issue, it will be good enough to be published in another more specialized journal, where it would probably attract more readers.
- Invited papers are – in some countries – considered to be less valuable than non-invited, regular publications.
- *More than one presentation per registered participant* would increase attractiveness of YIC, because participants can share more ideas.
- *Minimum presentation time 15 min*: Participants should be allotted with enough time for presentation and discussion. 15 minutes are considered to be the minimum desired presentation duration. 15'+5' as well as 18'+2' formats were discussed.

Industry-related ideas for new formats at YICs

- *Industrial research perspectives*: Directors of internationally-oriented and renown industrial research centers should present current and future directions relevant in their field, e.g. aerospace industry, car industry, building materials industry, etc. Also industrial career perspectives and the desired requirement profile expected from young investigators should be included.
- *Industry benchmark*: Industry provides the detailed description of a relevant, but not too complicated problem, and carries out related experiments. The latter will not be publically available prior to the YIC. Participants are invited to compute genuine predictions. At the YIC, predictions are compared with experimental data, and the reliability of the predictions is quantified according to a pre-defined scheme. Winner receives a prize sponsored by industry: money, paid internship, job offer, etc.

Challenges and Short Courses

- *Simulation challenge* is an idea similar to the benchmark described above, but without contributions from industry and without time-consuming and expensive experiments. In more detail, EYIC organizers define a problem (with or without analytical solution), participants will work on that prior to YIC, and the experiences encountered during simulation of the problem as well as differences of the obtained solutions are discussed at YIC.
- *Short Course*: Temporally very close to the YIC, short courses on attractive topics can and should be organized.

YIC 2013 in Bordeaux/France: organizational aspects

Given the already rather tight time frame regarding preparation of YIC 2013, local organizers (Ludovic CHAMOIN and Federica DAGHIA) will discuss outcome of the brainstorming, set up the program and communicate this to all EYIC members.

- Formats of YIC are expected to undergo a continuous development in the forthcoming years
- All members of the EYIC are expected to appear in the scientific advisory board of YIC 2013
- All members of EYIC are expected to very actively disseminate information on YIC 2013. A conference flyer would be very helpful in this context.

Ideas to inform more young investigators about EYIC activities

- A Google group mailing list (possibly announced at ECCOMAS Website) will facilitate the dissemination of information not only among EYIC members, but also among interested young investigators (person in charge: Federica DAGHIA). Dissemination will include information on mobility and research grants as well as on free research positions in Computational Methods in Applied Sciences.
- The possibility of setting up a EYIC group in web-based social networks (such as LinkedIn, Facebook, and ResearchGate) were discussed. While the idea was considered to be good, it appears to be too time-consuming, i.e. nobody volunteered to take over this job.

Session organization: activity reports

The following sessions were (co-)organized by EYIC members at ECCOMAS 2012:

1. Marino ARROYO: "Applications of computational geometry in analysis"
2. Stephan BORDAS: "Toward multiscale and adaptive PUM for fracture and heterogeneous materials" and "Innovative numerical methods for interface propagation in solids or coupled fluid-solid problems"
3. Ludovic CHAMOIN: "Error estimation and modeling adaption in computational mechanics"
4. Stefan LÖHNERT: "Toward multiscale and adaptive PUM for fracture and heterogeneous materials"
5. Bernhard PICHLER: "Partially saturated materials and structures"
6. Alessandro REALI: "Isogeometric Analysis"
7. Robertt VALENTE* : "Developments on finite element and meshless formulations applied to metal forming problems"

The following sessions at ECCOMAS thematic conferences in 2013 will be (co-)organized by EYIC members:

1. Ludovic CHAMOIN: ADMOS 2013 "Guaranteed bounds"
2. Bernhard PICHLER: EURO:TUN 2013 "Constitutive models for support materials"
3. Alessandro REALI: SEECM III "Isogeometric Methods"
4. Robertt VALENTE* : COMPLAS XII (2013) "Advances in constitutive modeling of metal forming processes across different length scales"

* EYIC guest participant

Future meetings

It was discussed that EYIC members will meet every year. The next meetings are foreseen as follows; details will be announced via the committee newsletter.

- 2013 meeting at YIC in Bordeaux/France
- 2014 meeting at WCCM in Barcelona/Spain
- 2015 meeting at YIC
- 2016 meeting at ECCOMAS conference in Crete/Greece
- 2017 meeting at YIC

The meeting ends at 20h03.