

COST ACTION FP1005

“Fibre suspension flow modelling - a key for innovation and competitiveness in the pulp & paper industry”

Minutes of the 5th Management Committee Meeting

Department of Mathematics and Computer Science, University of Udine

Via delle scienze 208, 33100 Udine, Italy

25 October 2013

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1. Welcome

The participants of the Management Committee (MC) meeting were welcomed by the Action Chair, Dr Cristian Marchioli. Meeting opens at 10:00.

A total of 8 participants from the following 7 Parties attended the meeting: Finland (FI), France (FR), Italy (IT), Norway (NO), Poland (PL), Portugal (PT), Sweden (SE).

With 7 of the 17 (41%) Parties having accepted the MoU to date represented at this meeting the quorum of 2/3 required under COST rules (see COST 4159/10 Annex II Art. 8) is not attained. Minutes of this MC meeting were then approved by written procedure.

The list of participants in the meeting is presented in Annex 2, their contact details can be found on the COST website at http://w3.cost.eu/index.php?id=183&action_number=FP1005

2. Adoption of the MC meeting agenda

The agenda of the meeting was approved without changes or additions by the MC members.

3. Minutes of the last meeting

The minutes of the 5th COST FP1005 MC meeting that was held on 08 March 2013, at the Dept. Chemical Eng., University of Coimbra (PT) were approved unanimously.

4. News from the Chair (C. Marchioli)

The Chair informed the MC about current status of the Action: up to the date of the meeting, 17 countries are included in the Action. There has been a change in the MC: Prof. Martin Sommerfeld, from Halle-Wittenberg University, has replaced Prof. Sven Altmann as MC member for Germany.

The total number of Action participants up to the date of the meeting is 115: 43 (7 females) participants have joined WG1, 24 (6) have joined WG2, 48 (3) have joined WG3. Gender balance is 14%. The presentation is found in Annex 3.

5. Progress report of working groups

The leader/deputy leader of each WG (F. Lundell for WG1, M.G. Rasteiro for WG2, and C. Marchioli for WG3) presented to the MC members an update on the status of the WG activities related to the Knowledge Base and to the selected test case problems, as well as initiatives to foster industrial involvement, participation and collaboration. These activities were discussed in parallel WG meetings held just before the MC meeting, on the same day. More details are provided in the WG meeting minutes downloadable from the Action website (<http://www.fp1005.cism.it>).

6. Action planning

The Chair updated the MC about the final claims of the Action budget for the 2nd GP (see slide 11 of Annex 3) and current budget situation for the 3rd GP (see slide 12 of Annex 3). The budget allocated for GP3 is 125,000€. The amount allocated for STSM is well above 20% of the total scientific expenditure.

7. Short Term Scientific Missions (STSM)

The STSM Coordinator (D. Asendrych) reported on the status of STSMs up to the meeting date (presentation is found in Annex 4). The following STSM applications have been submitted and accepted during calls I, II, and III of the second Grant Period (GP):

STSM #	STSM Grantee	Affiliation	Host Institution	Period	Grant [€]	Status
11261	Cristian Marchioli	University of Udine, Italy	NTNU Trondheim, Norway	16.07.2012 11.08.2012	1900	Completed
11272	Sergio Chibbaro	University P.M. Curie, Paris, France	University of Udine, Italy	16.07.2012 13.08.2012	2100	Completed
11290	Michael Reeks	University of Newcastle, UK	University of Udine, Italy	23.07.2012 11.08.2012	1400	Completed

11517	Francesco Picano ESR	KTH Stockholm, Sweden	TU Eindhoven, Netherlands	01.10.2012 11.11.2012	1950	Completed
11624	Sanna Haavisto ESR	VTT, Jyväskylä, Finland	UC Davis (CA), USA	12.01.2013 09.02.2013	2492	Completed
11625	Juha Salmela ESR	VTT, Jyväskylä, Finland	UC Davis (CA), USA	12.01.2013 26.01.2013	1596	Completed
12601	Jure Ravnik ESR	University of Maribor, Slovenia	University of Udine, Italy	25.02.2013 22.03.2013	1731	Completed
13231	Pedro Faia	University of Coimbra, Portugal	Innventia, Stockholm, Sweden	04.05.2013 12.05.2013	1995	Completed
13245	Hugo Costa ESR	University of Coimbra, Portugal	Innventia, Stockholm, Sweden	04.05.2013 12.05.2013	1995	Completed
13021	Rui Cesar Costa da Silva ESR	University of Coimbra, Portugal	KTH Stockholm, Sweden	12.04.2013 14.06.2013	2270	Completed
13904	Jari Kolehmainen ESR	Tampere University of technology	University of Udine, Italy	22.05.2013 16.06.2013	1700	
					Σ 21 129	

64% of STSM beneficiaries are ESRs (7/11), 9% are females (1/11).

The following STSM applications have been submitted and accepted during the third GP:

14426	Daniel Queteschiner ESR	University of Linz, Austria	University of Udine, Italy	08.07.2013 02.08.2013	1729	Completed
15374	Lihao Zhao ESR	NTNU Trondheim, Norway	University of Udine, Italy	05.11.2013 16.11.2013	1440	Approved
					Σ 3 169	

100% of STSM beneficiaries are ESRs (2/2), 0% are females (0/2).

8. Training Schools

8.1 Past TS:

The Chairman reported on the outcome of TS 2013 on “Non-spherical particles and aggregates in fluid flows” (2nd GP):

- The TS was organized jointly with COST Action MP0806 “Particles in turbulence” and was held at the International Centre of Mechanical Sciences (CISM) in Udine (Italy).

- The total number of participants was 45: 36 trainees (of which 11 were supported by Action FP1005, and 5 by Action MP0806) plus 7 lecturers (of which 3 were supported by Action FP1005, and 2 by Action MP0806) and 2 workshop speakers.
- Trainees supported by Action FP1005:
 1. Bianco, Federico fedbianco@gmail.com
Jean Le Ronde D'Alembert (Paris, France)
 2. Chadil, Amine achadil@imft.fr
Institute de Mechanique des Fluides Toulouse (Toulouse, France)
 3. Cotas, Carla carlacotas@gmail.com
University of Coimbra (Coimbra, Portugal)
 4. De Corato, Marco ma.decorato@gmail.com
Università di Napoli Federico Secondo (Naples, Italy)
 5. De Monaco, Gaetano gaetano.demonaco@unina.it
Università degli studi di Napoli "Federico II" (Napoli, Italy)
 6. Elfvingren, Jouni jouni.elfvingren@tut.fi
Technical University of Tampere (Tampere, Finland)
 7. Håkansson, Karl karlh@mech.kth.se
Royal Institute of Technology (Stockholm, Sweden)
 8. Kolehmainen, Jari jari.kolehmainen@uta.fi
Technical University of Tampere (Tampere, Finland)
 9. Kvik, Matias [kvick@mech.kth.se](mailto:kvik@mech.kth.se)
KTH, Royal Institute of Technology (Stockholm, Sweden)
 10. Nilsen, Christopher christopher.nilsen@ntnu.no
Norwegian University of Science and Technology (Trondheim, Norway)
 11. Zhang, Feng zhang@mech.kth.se
KTH, Royal Institute of Technology (Stockholm, Sweden)
- Dates: June 17-21, 2013
- Lecturers:
 - From Action FP1005: C. Marchioli, F. Lundell, B. van Wachem
 - From Action MP0806: F. Toschi (TUE), B. Mehlig (GU)
 - Experts: E. Shaqfeh (Stanford), E. Climent (IMFT), M. Sommerfeld (MLU)
 - Other speakers: M. Vanni (PoliTO)
- The following topics were covered:
 - Euler-Lagrange methods for DNS/LES of non-spherical particles and aggregates in turbulent shear flow and homogeneous isotropic turbulence
 - Euler-Euler methods for particles in fluid flows
 - Experimental methods for measurement of non-spherical particles in laminar/turbulent flows
 - Rheology of anisotropic particle suspensions
 - Simulation methods for finite-size particles/bubbles and non-colloidal suspensions in fluid flows
 - Simulation methods for break-up, agglomeration and coalescence in fluid flows
- The proceedings of the lecture notes will be published in the form of a book edited by Springer, most likely in the summer of 2014 (4th GP).
- TS webpage: http://www.fp1005.cism.it/pages/FP105_ts2013cism.html

8.2 Future TS: TS 2014 on “Particle characterization and multiphase flows monitoring”

For the 3rd GP, the Chairman has proposed to organize two training schools:

- One on “Particle characterization techniques and multiphase flows monitoring”, which will be organized by M.G. Rasteiro at the Dept. Chemical Engineering, University of Coimbra, Coimbra. It was agreed that the TS should last 3 days (possible dates are 11-13 or 16-18 June 2014) and that the number of trainees should not exceed 12 to allow efficient (not over-crowded) measurement sessions.
- One on “Collective dynamics of particles: from viscous to turbulent flows”, which will be organized by C. Marchioli and G. Bouchet at CISM (Udine). The TS will last 5 days (26-30 May 2014) and the expected number of trainees is 25/30.

Selected trainers are: Gilles Bouchet (Marseille), Martin Maxey (Brown Uni.), Holger Homann (CNRS Nice), Mikael Bourgoïn (Grenoble), John Hinch (Cambridge), Jason Butler (Florida Uni.)

A workshop session on applications (coordinated by C. Marchioli) will also be organized. Time schedule and topics to be covered can be found in Annex 5

9. Dissemination

9.1 Publications

The Chair informed the MC about the current status of publications published in the frame of the Action. Up to the meeting date, there are 7 new publications on international ISI journals, 2 submitted and 2 Conference contributions, listed below and on the Action website. A book with a collection of the lectures given at the TS on "Non-spherical particles and aggregates in fluid flow" will also be published towards the end of the 3rd GP.

Papers published in international peer-reviewed journals:

- L. Zhao, C. Marchioli, H. Andersson "Stokes number effects on particle slip velocity in wall-bounded turbulence and implications for dispersion models", *Phys. Fluids*, **24**, 021705 (2012); doi: 10.1063/1.3690071
- L. Zhao, H.I. Andersson, J.J.J. Gillissen "Interphasial energy transfer and particle dissipation in particle-laden wall turbulence", *J. Fluid Mech.*, **715** (2013), 32-59.
- C. Marchioli, A. Soldati "Rotation statistics of fibers in wall shear turbulence", *Acta Mechanica*, **224** (2013), 2311-2330.
- L. Zhao, H. Andersson, J.J.J. Gillissen "On inertial effects of long fibers in wall turbulence: concentration, orientation and fibers stresses", *Acta Mechanica*, **224** (2013), 2375-2384.
- F. Zhao, B.G.M. van Wachem "Direct numerical simulation of ellipsoidal particles in turbulent channel flow", *Acta Mechanica*, **224** (2013), 2331-2358.
- R. van Hout, L. Sabban, A. Cohen "The use of high-speed PIV and holographic cinematography in the study of fiber suspension flows" *Acta Mechanica*, **224** (2013), 2263-2280.
- E.J. Tozzi, D.M. Lavenson, M.J. McCarthy, R.L. Powell "Effect of fiber length, flow rate, and concentration on velocity profiles of cellulosic fiber suspensions" *Acta Mechanica*, **224** (2013), 2301-2310.

Papers submitted international peer-reviewed journals:

- L. Zhao, C. Marchioli, H. Andersson "Slip velocity of rigid fibers in wall-bounded turbulence", *Phys. Fluids*, *In Preparation* (2013).
- C.A.F. Ventura, F.A.P. Garcia, P.J.T. Ferreira, M.G. Rasteiro, "Modelling pipe friction loss of pulp fibre suspensions" *Part. Sci. Tech. Submitted* (2013).

Conference papers:

- C. Marchioli "FPS COST Action FP1005 - Fibre suspension flow modelling: A key for innovation and competitiveness in the pulp & paper industry" *APS/DFD Meeting, Pittsburgh (USA), November 23-25, 2013.*
- C. Marchioli "On the rotation of rigid fibers in wall shear turbulence" *APS/DFD Meeting, Pittsburgh (USA), November 23-25, 2013.*

9.2 Annual report

The Chair informs the MC members that he will send a message requiring the information necessary to prepare the annual report that is due by the end of 2013.

9.3 Dissemination strategies

The following strategies to advertise the Action activities will be implemented:

- Submit a short paper to Nordic Pulp and Paper Research Journal
- Present the Action and its activities at the 2013 APS-DFD Meeting (Pittsburgh, November 24-26, 2013). This meeting is not organized by COST Action FP1005, but is relevant for the Action objectives, both to disseminate the Action's activities and to collect information to be further disseminated amongst the Action's members.

The Chair informed the MC that he has submitted an abstract (see Annex 7), which was accepted for oral presentation. The MC approves the request of the Chair to attend this Dissemination Meeting with a maximum contribution of € 500.

- Present the Action and its activities at the NORDITA program “Dynamics of Particles in Flows: Fundamentals and Applications” (NORDITA/KTH, Stockholm, June 2-27 2014, Organisers: F. Lundell, B. Mehlig, D. Mitra, F. Toschi).

Website: <http://www.nordita.org/events/flows2014/>

9.4 Outreach activities

- Advertise the Action's activities (STSMs in particular) through the Association of European Fibre and Paper Research Organisation (EFPRO). Several Action members (A. Blanco, B. Breznik, W. Bauer, H. Grossmann, J. Poranen, W. Sampson) are also involved in EFPRO and will be asked to coordinate joint activities and events.

10. Request for new members

The Chair informed the MC that, since the last MC meeting (Coimbra, 08 March 2013) no new application to join the Action was received.

11. Promotion of gender balance and of Early Stage Researchers (ESR)

The Chair informed the MC that the percentage of female participants is 14.0% (+0.7% with respect to the previous MC meeting). It is quite difficult to increase further the percentage due to the scarce involvement of female researchers in fields of relevance for the Action (notably technology, engineering and mathematics, where the estimated average percentage of female scientists is about 10%). The percentage of ESR is about 39% (+12%), and increased wrt the previous MC meeting thanks to the high number of young trainees and STSM applicants.

12. Non-COST country participations

The Chair informed the MC that no new applications from non-COST countries or institutions have been received at the date of the meeting.

13. Action website

13.1 Report on current state (C. Marchioli)

The Chair informed the MC that Knowledge Base section of the Action's website (www.fp1005.cism.it), which serves as data repository from the test case calculations, is being continuously updated with new data sets.

13.2 Discussion on further development and content

The Chair showed briefly the website's content. The website will be updated continuously with useful information such as publications, scientific achievements, job opportunities, etc. The Chair has confirmed the will to continue taking responsibility of managing the website for free.

14. AOB

14.1 Place and date of next meeting

The MC decided that the next meeting of the Action would be:

Date	Event	Location	Justification
03-05 June 2014	Joint MC-WG meeting/workshop	NORDITA, KTH, Stockholm (SE)	Accessibility, cost of flights and availability of cheap hotels nearby

The Meeting will be organized as part of the NORDITA Program Dynamics of Particles in Flows: Fundamentals and Applications (June 2-27 2014, Organisers: F. Lundell, B. Mehlig, D. Mitra, F. Toschi). Scientific presentations from Action participants will be given as part of the program. The WGs will organize parallel meetings on Thursday, June 05, 2014 in the morning (tentative meeting hours: 9:30 – 11:30), followed by the MC meeting (tentative meeting hours: 11:45 – 13:00).

The MC decided that:

(1) participation fees for this meeting should not exceed € 1000 for members of the Action (exceptions are only possible if well motivated)

(2) the accommodation reimbursement rate would be € 100/night.

14.2 Tour de Table

MC members presented present/future national coordination and communication activities.

These will be summarized in specific reports.

15. Closing

The MC meeting closed at 11:30.

Cristian Marchioli

Chair

COST Action FP1005

ANNEXES

Annex 1: Meeting Agenda

http://www.fp1005.cism.it/downloads/FP1005_MC6_2013_10_23-25_Agenda.pdf

Annex 2: Attendance List

NAME	STATUS	e-MAIL	NAME	STATUS	e-MAIL
Helge Andersson	MC Member Norway	helge.i.andersson@ntnu.no	Dariusz Asendrych	MC Member Poland	darek@imc.pcz.cz.est.pl
Marina Campolo	MC Substitute Italy	marina.campolo@uniud.it	Fredrik Lundell	MC Member Sweden	Fredrik@mech.kth.se
Cristian Marchioli	MC Chair Italy	cristian.marchioli@uniud.it	Maria Graça Rasteiro	MC Member Portugal	mgr@eq.uc.pt
Salaheddine Skali-Lami	MC Member France	salaheddine.skali-lami@univ-lorraine.fr	Pentti Saarenrinne	MC Substitute Finland	pentti.saarenrinne@tut.fi

Annex 3: Presentation of Chair



FP1005_MC6_Presentation.pdf

Annex 4: Presentation of STSM Coordinator

http://www.fp1005.cism.it/downloads/SIG43_FP1005-PRESENTATIONS/STSM_guide.pdf

Annex 5: TS “Collective dynamics of particles: from viscous to turbulent flows”



Bouchet-Marchioli_41.pdf

Annex 6: Special Issue on Acta Mechanica



SI.pdf

Annex 7: APS/DFD Dissemination Meeting Abstract



MWS_DFD13-2013-00559.pdf