

CCP-NTH MCM-1 MEETING MINUTES

CCP-NTH MCM-1 MEETING	
Date	20 th Jan, 2021
Location	Zoom Online Meeting
Participants	Present: Mike Bluck (MB), David Emerson (DE), Michael Fairweather (MF), Shuisheng He (SH), Charles Moulinec (CM), Elia Merzari (EM), Juan Uribe (JU), Wei Wang (WW)
	Absent: Hector Iacovides (HI), Eugene Shwageraus (ES)
Minutes produced by	Wei Wang
Approved by	
Version No.	1.0

1. Meeting Objectives

- To update the progress of tasks planned in the last MCM meeting
- To discuss and approve tasks planned for the next 6 months
- To briefly update recent work in each group

2. Minutes of the previous meeting

Actions Review:

- All done except for some on-going tasks which are listed in Action Table of these minutes.
- MB mentioned he will chase their legal team about the contract, and he expects an answer by Friday 22nd January 2021.
- SH mentioned that PhD students are not eligible for receiving EPSRC funding, but they could be involved in some activities led by the academics.

Other Matters arising from the last meeting: No.

3. Notes

Section 1: Chair's report, including progress and plans for WP1 (community building) by SH

- SH gave some updates about the CCP activities until Dec 2020, including the first MCM meeting in May 2020, the ATM meeting in September 2020, the meeting with CCP-Turbulence in October 2020, two CHAPSim User Meetings in September and December 2020. The meeting with CCP-Turbulence was about potential collaboration and community activities. For the potential collaboration, a way forward could be to use the same libraries for the two flagship codes (CHAPSim and xcompact3d) and share the same data output format to facilitate data transfer between the two codes. *SH will circulate the documents on ToR and visiting grants. (ACTION)*

- SH shared the feedback from the CCP Steering Panel Meeting. Some details are provided by SH's slides.
- SH gave some updates about the other relevant developments/events and details are to be found in SH's slides.

Section 2: Progress and plans for WP2 (software development)

- WW updated the WP2 progress for code development and maintenance.
- WW updated the progress on the website. The website is under construction with CoSeC support. Current news/events could be published via CoSeC website and Twitter account.
- WW updated the SubChCFD activities from UoS and EDF Energy. The performance of Code_Saturne has been assessed on Archer2 for a simple test case.
- The first unified CHPASim (CHAPSim1.0) with added new functions (more working fluid media, such as liquid metal and water, conjugate heat transfer, user-friendly input/output interface, etc) has been released in <https://github.com/WeiWangSTFC/CHAPSim>. This is not widely advertised but is mostly for the current users to test, though any interested parties can request for access. When the next version is ready, it will be made widely known to all CCP members.
- The performance of CHAPSim1.0 has been assessed on Archer2.
- WW updated the plan changes for CHAPSim2.0 and the details are to be found in WW's slides.
- WW updated the technical support for CHAPSim users and Code_Saturne users.
- WW updated the workplan for the next stage.

Section 3: Round table update (Updates/news on any matters relevant to the CCP from each group/member and Challenges and potential collaboration)

- MB gave some updates about the work at ICL. This includes code-coupling, T-junction simulations, Gaussian process machine learning, turbulence surrogate modelling, progress on the UK/US project, gas-cooled reactor facilities in the application and the BARC project progress. MB also mentioned that they are recruiting an academic staff in thermal hydraulics thanks to some institutional support.
- JU gave some updates about some recent work in his group. EDF plans to apply the subchannel code developed during the BEIS project to an industrial application. JU mentioned to send an email to SH to update this work (ACTION). JU also mentioned that UK academic staff can access Horizon 2020. the EU framework and EDF France will still be able to collaborate with UK academical institutes.
- SH gave an update of the recent work at UoS. This includes their DoE and EPSRC projects (US/UK) on liquid metal and gas-cooled reactors, a European project on supercritical water small reactors collaborating with people from material, structure and safety fields. He was happy to see that the developed subchannel code will be used in industry. The BEIS project will come to end by March 2021.
- CM gave a short update about the thermal hydraulic related work at STFC, mainly through collaborations with UoS on UK/US projects, the BEIS project and the CCP.NTH.
- MF gave an update about the work from his group at Leeds University. This includes fluid-particle interaction in reactors, cladding in nuclear reactors, behaviour modification and agglomeration of flow, boiling modelling in the BARC project, and liquid sodium. MF also mentioned the facilities for the national nuclear users community.

Section 4: Discussion on future plans

- SH hosted the discussion on future plans of WP1.

- **Special topic seminar:** All people agreed this is good and beneficial to the community. SH agreed to arrange the first one from his group in UoS. About the format of this activity, SH suggested each activity could include an invited keynote talk and a couple of short talks on a given topic but the format for each activity could also be different and flexible. The other participants agreed on this format. About the time, SH suggested 1-2 hours on a Friday afternoon, but this is not set in stone yet. DE ruled out the noontime until 2 pm due to STFC's recent suggestion on meeting-free diary zone for staff wellbeing. The date and time will be further discussed and confirmed to the participants by WW and SH (ACTION).
- **User Group Meeting:** the next one will be in March 2021.
- **2nd ATM meeting.** SH gave an overview of the events in June-September 2020 and suggested December for the 2nd ATM meeting. EM suggested to avoid the mid-semester time and 10-15th December 2021 could be good a good option.
- **Training of NEK5000:** SH asked EM about possibilities of arranging a NEK5000 training course as there are several groups in the UK using NEK5000. EM mentioned trainings are free and some information needs to be provided in advance: a) the number of people to attend the training, b) the length of the training required, say, 2 hours, half-day, full-day, etc, c) the topics of interest, say, how to run example cases, how to set up cases, how to mesh for NEK5000, etc. With above information, EM is willing to arrange a NEK5000 training course. SH will collect such information somehow (ACTION).
- WW hosted WP2 work plan discussion.
 - MB asked how to test/validate after the code is developed. WW mentioned the initial test of the scheme with a heat transfer problem and then validation of the code with classical DNS examples (eg Moin Ret180). SH, CM and WW will discuss about this. (ACTION)
 - MF talked about benchmark cases. Professor Launder shared several thermal hydraulics benchmark cases years ago. It could be an idea to expand these benchmark cases.

SH and WW share their slides with the members. (ACTION)

Section 5: AOB and Date for the next meeting

- Some time in July 2021. WW will arrange this meeting. (ACTION)

Section 6: Other Business

- None.

4. Summary of Actions			
Number	Who	Action	Due date
MC1-5	WW	To ask for/collect materials/pics/videos from volunteers in the next annual meeting.	Not confirmed.
MC1-10	All	To collect some information about existing/ongoing benchmarking exercise. All should start to think about suggesting titles etc	Ongoing...
MC1-11	WW	The work plan document will be shared in the online storage.	After website available
MC2-1	SH	to circulate the documents on ToR and visiting grants	ASAP
MC2-2	JU	to send an email to SH to talk subchannel code application in EDF	When it is ready to do so
MC2-3	SH, WW	To confirm the date and time for the 1 st special topic seminar and to arrange this seminar	ASAP
MC2-4	SH, WW	To share slides with the members	ASAP
MC2-5	CM, JU	To produce information sheet on the training course on 10-11 th March for circulation	On time.
MC2-6	SH	To collect information for the Nek5000 training course	Before next MCM
MC2-7	WW	To arrange the next MCM meeting in July	June
MC2-8	SH, CM, WW	To discuss about a more definitive/specific approach to validate the code before each release	In the Monthly meeting in Feb