
UK Consortium on Turbulent Reacting Flows (UKCTRF): 4th Annual Review Meeting

Nilanjan Chakraborty

School of Mechanical & Systems Engineering
Newcastle University, Claremont Road, Newcastle-Upon-Tyne, NE1 7RU



University of Southampton, 7th September 2017

Agenda

- Plans for next meeting
 - Usage of computational time so far
 - Review of application process for computational time allocation
 - Materials for Consortium website
 - Annual progress report
 - Travel funding by consortium
 - Any Other Business (AOB) and matters arising from earlier meeting
-

Workplan and future meetings

Phases \ Quarter	1 1	1 2	1 3	1 4	2 1	2 2	2 3	2 4	3 1	3 2	3 3	3 4	4 1	4 2	4 3	4 4	5 1	5 2	5 3	5 4	Milestones/ Deliverable		
I. Orientation of new HPC users and initial allocation for HPC time				◀ M1																	⇒ M1 (Year 1 report)		
II. Code development and initial validation for WP1 and WP2																							
III. Production level runs for WP1 and WP2 using HPC facilities																					◀ M2	⇒ M2 (Year 2 report)	
IV. Architecture development for future platforms and post-processing tools																							
IV. Technology development from the findings of WP1 and WP2																					◀ M3	⇒ M3 (Year 3 report)	
V. Website development and maintenance																							
VI. Dissemination																				◀ M4	⇒ M4 (Year 4 report)		
Progress markers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>		
	R1 Kick-off meeting (Year 1)	R2 Annual progress meeting (Year 1)			R3 Annual progress meeting (Year 2)				WS1: Workshop1 + R4 Annual progress meeting (Year 3)						R5 Annual progress meeting (Year 4)						WS2+ Final meeting (Year 5)		
	Initial planning of the utilization of computational time.	Year 1 Interim Report			Year 2 Interim Report				Year 3 Interim Report					Year 4 Interim Report							Final report	⇒ Deliverable	

Jan 14

Jan 15

Jan 16

Jan 17

Jan 18

Jan 19



We are here

Plans for the next meeting

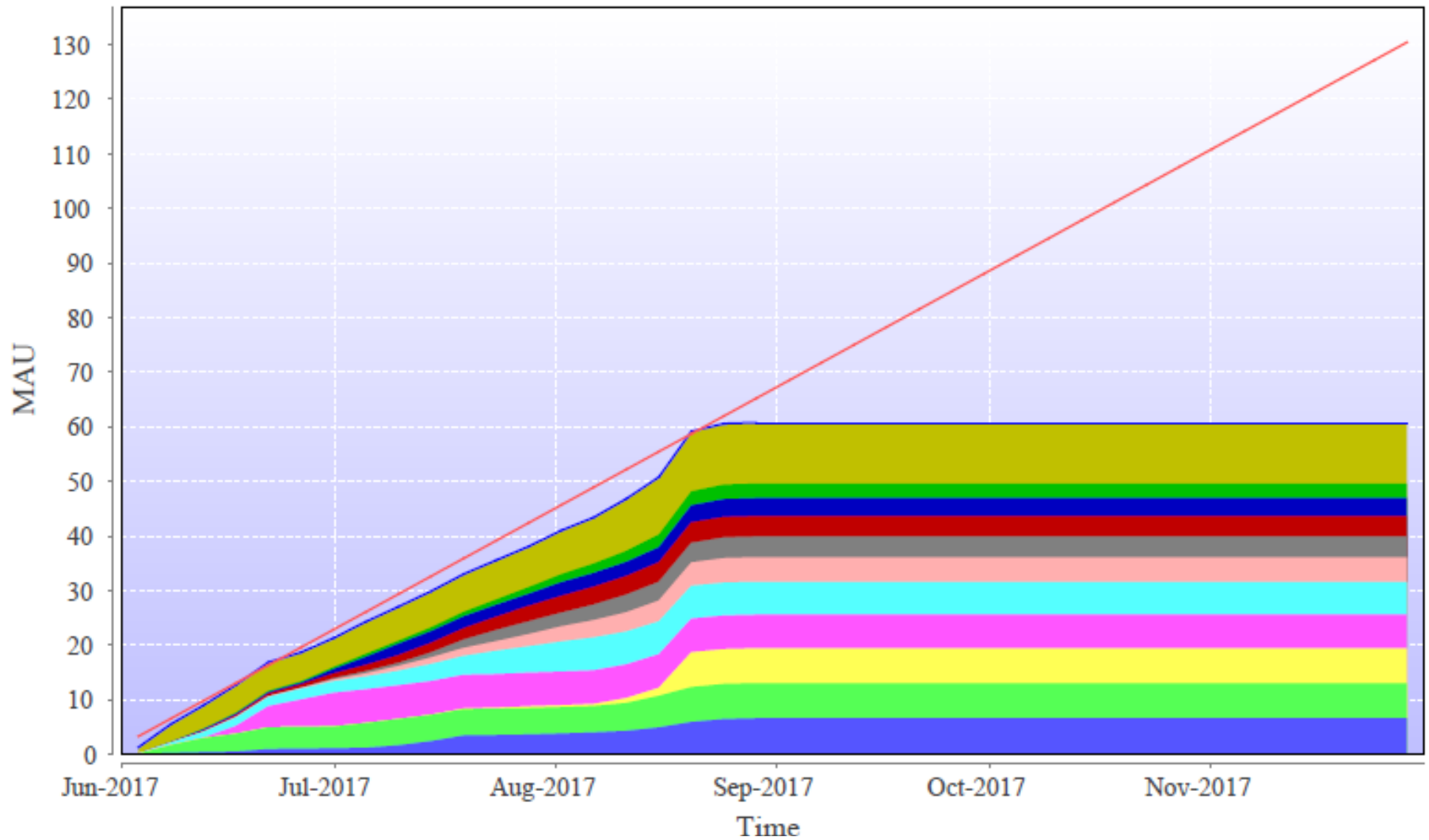
- Date of next annual progress review meeting
(Tentative Plan: September 2018)
 - Venues of the final workshop & meeting
 - Invitees
 - Format of the meeting
-

Computational time allocation (in our application)

	Largest Job	Typical Job	Smallest Job
Number of (MPI) processes.	20480	2048	32
Number of processes used per node	32	32	32
Wallclock time for each job.	12 hours	12 hours	12 hours
Number of jobs of this type	48 per year 96 over 2 years	240 per year 480 over 2 years	120 per year 240 over 2 years
Total memory required.	20480 GB	2048 GB	32 GB
Amount of data read/written to disk in each job.	1024 GB	192 GB	64 GB
Amount of data to be transferred to/from HECToR per job.	1 GB	500 MB	50 MB

It amounts to 621,000 kAUs where The Allocation Unit (kAU) is a unit of computational work, roughly equivalent to a 1 Tflop/s processor running for 1 hour, as assessed by the Linpack benchmark (Rmax).

Usage of computational time allocation



Computational time allocation: Current status

Group	Allocation	Remaining	After Change
1	4,860.70	4,858.40	4,858.40
2	12,000.00	4,914.90	4,914.90
3	1,800.00	1,800.00	1,800.00
4	2,650.20	206.8	206.8
5	5,300.40	4,166.30	4,166.30
6	5,300.40	4,644.50	4,644.50
7	3,780.00	2,649.50	2,649.50
8	2,000.00	108	108
9	6,000.00	2,018.20	2,018.20
10	8,251.00	5,469.00	5,469.00
11	5,000.00	1,144.00	1,144.00
12	1,251.80	2.4	2.4
13	6,000.00	-28.9	-28.9
14	13,251.00	8,621.80	8,621.80
15	13,251.00	7,082.40	7,082.40
16	13,251.00	6,762.10	6,762.10
17	13,248.00	6,883.60	6,883.60
18	7,241.70	4,593.90	4,593.90
19	6,008.80	2,359.20	2,359.20

Application for computational time allocation

- Application form is available on <http://forms.ncl.ac.uk/view.php?id=5420>
 - Review process & review panel (NC,RSC,DE,WPJ,EM and NS)
 - Queries are dealt within 48 hours
 - Decision is made typically within 10 days
 - We have to decide on the policy of multiple applications from a particular group
 - Demand is higher than availability and EPSRC wants us to be stricter before awarding the computational time
 - Any feedback to improve the process or make it better
-

Travel funding by consortium

- We contributed £500 towards the cost of attending the International Combustion Symposium for those who had accepted papers for oral presentation (15 in total)
- We contributed £250 towards the cost of attending the International Combustion Symposium for Work-in-progress poster presenters (3 in total)
- Research carried out in this consortium gave rise to 20 symposium papers
- In 2015-2016 academic year 100+ journal and 120+ conference papers arose from this consortium
- The management team has decided to contribute £1000 to the conference cost per group in this calendar year (so far we approved travel costs for 7 research groups).

Please do not forget to acknowledge the consortium and ARCHER

Consortium website (www.ukctrf.com)

- Application forms for reimbursement and computational time application are available
 - List of publications by the consortium members
 - List of the travel grants for PhD students and RAs
 - List of presentations given in earlier meetings, annual reports and case studies are available on the website
 - Materials for the website from consortium members will be requested soon
-

Annual progress report

- EPSRC required an extensive report and a minimum of 3 case studies based on our year 3 activities
 - The Management Team (MT) prepared a report and submitted 4 case studies (1 on droplet combustion from Brunel, 1 on CMC LES from Cambridge, 1 on DNS of Flame-Wall Interaction from Newcastle and 1 on Fire simulation from University of Warwick)
 - We will need list of publications, list of grants and prizes and case studies from the consortium members for the next annual progress report.
-

Any Other Business (AOB)

- We are in the middle of the preparing the bid for the renewal of the consortium.
 - Thanks for attending this meeting and giving your valuable feedback.
-