

Minutes of the Steering Committee meeting

31st October and 8th and 9th of November 2023

Online (MS Teams)

SC members present:

Renato Vacondio, University of Parma, Italy (Chair)
Ben Rogers, University of Manchester, UK (Vice chair)
Xiangyu Hu, Technical University of Munich, Germany
Angelo Tafuni, New Jersey Institute of Technology, USA (Webmaster)
Alex Crespo, University of Vigo, Spain
Matthieu de Lefte, Nextflow Software, France
Salvatore Marrone, CNR-INM, Italy
Antonio Souto-Iglesias, Universidad Politecnica de Madrid, Spain
Abbas Khayyer, Kyoto University, Japan
Tom De Vuyst, University of Hertfordshire, UK
Pierre Sabrowski, Dive Solutions, Berlin, Germany
Nathan Quinlan, NUI Galway, Ireland
Giuseppe Bilotta, INGV, Italy

Also Present:

Georgios Fourtakas, University of Manchester, UK
Pengnan Sun, Sun Yet-Sen University, China
Corrado Altomare, UPC, Spain

1. Discussion of Actions from last meeting

The following actions were discussed at the start of the meeting:

Action 1: Complete Gresho vortex benchmark

By: Georgios Fourtakas

Status: not discussed

Action 2: Complete solid mechanics benchmark

By: Tom De Vuyst

Status: Carry over deadline to next SC meeting

Action 3: Upload FSI benchmarks on SPHERIC website

By: Angelo Tafuni

Status: has not been completed yet

Action 4: Inform successful and unsuccessful SC applicants during the Rhodos workshop

By: Renato Vacondio

Status: Complete

Action 5: Encourage unsuccessful SC applicants to reapply at the next opportunity.

By: Renato Vacondio

Status: Complete

Action 6: Enquire with Chun Hean Lee to organise the 2026 workshop in Glasgow.

By: Renato Vacondio

Status: Complete

Action 7: Publish July newsletter

By: Xiangyu Hu, new Newsletter editor

Status: Complete

Action 8: Appoint new Newsletter editor

By: Renato Vacondio

Status: Complete – Giuseppe Bilotta has agreed to be the new Newsletter Editor

Action 9: Provide update to Renato Vacondio on reducing conference fees for Berlin 2024 workshop.

By: Pierre Sabrowski

Status: Complete

Action 10: Decide on keynote speakers for Berlin workshop.

By: Pierre Sabrowski

Status: complete - see Item on Berlin Workshop

Action 11: Abbas Khayyer to contact his colleague for the delivery of the ISPH lecture on the training day and communicate with Pengnan Sun

By: Abbas Khayyer, Pengnan Sun

Status: Complete – IT was agreed that Abbas will deliver the talk on ISPH

Action 12: Organise 2025 SPHERIC workshop at UPC, Barcelona, Spain

By: Corrado Altomare

Deadline: 2025

Action 13: Share the conference webpage developed for the Rhodos workshop with Corrado Altomare

By: Georgios Fourtakas

Status: In progress – website has not been shared yet.

Action 14: Write document outlining SPHERIC workshop process

By: Ben Rogers, Corrado Altomare

Status: not completed

Action 15: Organise a 1 day event “New SPH developments for Solid Mechanics” in early 2025

By: Tom De Vuyst

Deadline: early 2025

Action 16: Contact all potential members to seek their agreement to join this SPHERIC Scientific Committee.

By: Renato Vacondio

Status: complete

Action 17: Review Guidance document on the review of SPH papers.

By: All SC members

Status: Complete

Action 18: “Guidance document on the review of SPH papers” published on the SPHERIC website.

By: Abbas Khayyer and Angelo Tafuni

Status: Complete

Action 19: present SLACK use at the next SC meeting

By: Pierre Sabrowski

Status: Complete

2. Specific Issues

Minutes from last meeting needs to be published (Tom De Vuyst and Angelo Tafuni)

All minutes are now available on the website.

Update on the 2024 Berlin SPHERIC Workshop (Pierre Sabrowski)

It was agreed that the Berlin workshop will use the SPHERIC Scientific Committee for the workshop Scientific Committee.

It was agreed that two workshop call for abstract announcements will be sent: in early December and one week before the abstract deadline. Pierre Sabrowski will prepare the announcement and send to Giuseppe Bilotta for publication.

A small contribution to the next Newsletter was also discussed. The call for abstracts will also be announced on social media platforms X and LinkedIn, and RV encouraged all SC members to use their personal social media accounts to publish the workshop call for abstracts.

Pierre Sabrowski showed the current Workshop webpage. Alex Crespo commented that the Libersky Prize could be mentioned in Section 1. Submit Your Abstract.

The Keynote/Training Day/Panel Discussion Speakers were discussed. Ben Rogers stated that SPHERIC has always invited non-SPH researchers to challenge the SPH community. RV stated it was important Keynote speakers should not be selected only their track record but also on their presentation skills. Pierre Sabrowski agreed. Abdulla Ghani is not an SPH specialist, but has been put in touch with a US based SPH researcher to ensure his Keynote is adapted for the SPHERIC audience. For the Keynotes, Felix Pause (DIVE) on SPH, Martin Ferrand (EDF) on FVM and Abdulla Ghani (TUB) on ML were agreed by the SC. Tom De Vuyst and Antonio Souto-Iglesias commented that the DIVE keynote should not be exclusively focussed on DIVE applications.

Ben Rogers stated that it was important to maintain balance in the DIVE contribution, and it was agreed that the training day speakers will be from other organisations. The SC agreed that Giuseppe Bilotta (INGV), Georgios Fourtakas or Abouzied Nasar (Univ. of Manchester) will be approached as the 1st speaker on SPH fundamentals. For the 2nd talk on Boundary Conditions, Tom De Vuyst proposed to contact someone from UPM as they have a long track record on BCs. ML proposed Julien Michel from Univ. de Nantes. The SC committee agreed.

The SC agreed to Felix Pause, Martin Ferrand, David Le Touzé and Andrea Colagrossi as panel members. Ben Rogers is happy moderate the panel discussion. Alternatively, David Le Touzé could

also be asked to moderate the panel discussion if he prefers. Abbas Khayyer suggested Moubin Liu as an alternative panel member because of his experience with SPH and other methods, and to have involvement from another continent.

Action: Publish Berlin Workshop and call for abstracts
By: Pierre Sabrowski and Giuseppe Bilotta (official SPHERIC channels), All (individual contacts and social media channels)
Deadline: First call early December, second (and last call) one week before deadline of 19 January 2024 (Abstract submission deadline)

Action: Publish Berlin Workshop and call for abstracts
By: Pierre Sabrowski and Giuseppe Bilotta, All
Deadline: 19 January 2024 (Abstract submission deadline)

Update on the 2024 SPH event in North America (Renato Angelo and Ben)

RV and Ben Rogers provided an update on the event. The event will run from 22nd to 24th of January 2024 and 40 abstracts have been accepted.

Update on the 2024 Asian SPHERIC workshop in Zhuhai, China (Pengnan)

Pengnan Sun confirmed the dates for the Asia Workshop: 17 to 20 October 2024. The speakers for the training day will be Zhilang Zhang (ETHZ), Abbas Khayyer (Kyoto) Yang Yang (Northwestern Univ. Xi'an). The Training Day will be delivered by Xiangyu Hu's team from TUM using the SPHINXsys. The keynote speakers were agreed.

Apart from the Libersky Student prize there will be 2 best paper awards to encourage submission of full-length papers.

Pengnan Sun also stated that for the Asia workshops the WeChat social media platform will be used in addition to X.

The workshop will also include a panel discussion which will be moderated by Abbas Khayyer. Angelo Tafuni stated that the workshop dates have already been published on the SPHERIC website. RV stated that the workshop website should be made public as soon as possible. The workshop will also be advertised using the SPHERIC mailing list and social media channels. However, this should be done after the announcement of the Berlin workshop to avoid confusion. It was also agreed the Pengnan Sun will announce the Zhuhai workshop during the Berlin workshop.

Ben Rogers proposed that social media accounts are used to advertise this workshop. It was also agreed that a leaflet on the Zhuhai workshop will be prepared for inclusion in the Berlin Workshop welcome pack. Pengnan Sun will also prepare a contribution on the Zhuhai workshop for the Newsletter.

Ben Rogers pointed out that the deadline for abstract submission is very close to the Berlin workshop. This may discourage people from submitting abstracts. Pengnan Sun suggested that abstracts that were not accepted for the Berlin workshop could be encouraged to resubmit an abstract to the Zhuhai workshop.

Action: Publish Zhuhai Workshop web page as soon as possible.
By: Pengnan Sun
Deadline: ASAP

Action: Advertise Zhuhai Workshop on social media.

By: All
Deadline: After Announcement on Berlin Workshop

Action: Create leaflet on Zhuhan workshop to include in Berlin Workshop welcome pack.

By: Pengnan Sun

Deadline: Berlin Workshop

Action: Prepare Newsletter contribution on Zhuhan workshop.

By: Pengnan Sun

Deadline: For Publication in Summer Newsletter

Update on 2025 SPHERIC workshop (Corrado)

Corrado Altomare presented an update on the organisation of the 2025 workshop in Barcelona. The proposed date for the workshop is 16th to 19th of June. The SC agrees with these proposed dates. Corrado Altomare confirmed that the training day will include access to BSC facilities. One of the Keynote speakers may be from BSC. Corrado Altomare presented an overview of the workshop costs. This would result in registration fees that lie between the Berlin workshop and previous workshops. Corrado Altomare proposed to move the Gala dinner to Thursday. Tom De Vuyst commented that this would add extra costs for attendees as it could require an extra night stay. Ben Rogers is in favour of local organisers having freedom to experiment with organisation schedule. It was agreed that the Gala dinner on Thursday is an acceptable option, and the Barcelona workshop can be used to evaluate if it works well.

Corrado Altomare confirmed he will have support from PhD students and University staff during the event.

RV highlighted that the Joe Monaghan prize will be awarded in Barcelona. Salvatore Marrone commented that the previous winner of the Joe Monaghan prize in the past have taken responsibility for the organisation of the next Monaghan prize, so it would require someone from the University of Manchester to take this on. Ben Rogers agreed to do this. Ben Rogers will announce the 4th Joe Monaghan Prize at the 2024 Berlin Workshop. Giuseppe Bilotta will take care of announcements in the Newsletter and via the mailing list. Salvatore Marrone stated that a problem is always to get enough nominations.

Ben Rogers raised the possibility of making the voting for the Joe Monaghan Prize more open as it is currently restricted to workshop attendees. Alex Crespo stated that in his opinion this was a good approach as people get to vote and see the result of their vote announced while they are present. Options to widen participation were discussed. Abbas Khayyer proposed to give a vote to members of the Scientific Committee. But the SC was divided on this. RV raised the issue of encouraging workshop attendees to vote as in the Catania workshop participation was around 50%. Giuseppe Bilotta and RV proposed to advertise the vote on the workshop website and to use social media channels. Nathan Quinlan proposed to add supplementary information on why papers were nominated on the workshop website. RV proposed to do this by inviting all nominees to provide a 5min presentation on their paper. Angelo Tafuni proposed to use a standard template for this. Ben Rogers will oversee this process.

Action: Organise 2025 Barcelona workshop

By: Corrado Altomare

Deadline: 2025 Workshop

Action: Organise 2025 Joe Monaghan Prize at Barcelona workshop

By: Ben Rogers

Deadline: 2025 Workshop

Action: Announce 2025 Joe Monaghan Prize at 2024 Berlin workshop
By: Ben Rogers
Deadline: 2024 Workshop

Action: Announce 2025 Joe Monaghan Prize in Newsletter and via mailing list
By: Giuseppe Bilotta
Deadline: 2024 Workshop

Action: Invite Joe Monaghan Prize nominees to provide a 5min presentation on their paper
By: Ben Rogers?
Deadline: 2025 Workshop

Discussion on the 2026 SPHERIC workshop (Renato and all)

RV contacted Chun Hean Lee to enquire about the SPHERIC workshop 2026 organised by the University of Glasgow. RV will contact Chun Hean Lee to present a proposal for a 2026 SPHERIC workshop in Glasgow at the next SC meeting in Berlin.

Action: Contact Chun Hean Lee to present proposal for a 2026 SPHERIC workshop in Glasgow at the next SC meeting in Berlin
By: RV
Deadline: ?

Grand Challenges Review/Update (Renato and All)

RV pointed out that the Grand Challenges (GCs) were created in 2012 and reviewed in 2017, and it may be an appropriate time to review them again. The SC agreed to this.

Giuseppe Bilotta stated that from his point of view there is an asymmetry between theoretical and practical Grand Challenges.

Nathan Quinlan agreed that the Grand Challenges need to be reviewed, but whether that means they need to be changed or not is open.

Salvatore Marrone and Tom De Vuyst commented that the Theoretical GCs have a direct impact on applicability so there is not a strict division between Theoretical and Practical GCs. RV stated the purpose of the GCs was to direct research to areas where additional effort is required, and Xiangyu Hu stated that GCs are necessary for SPH to become a mature method.

Tom De Vuyst commented that maybe the GCs can be reviewed to highlight the relevance of the GC items to specific practical applications.

Following a discussion and proposals from Ben Rogers and RV the SC agreed that to progress:

1. The review of the GCs and subsequent update of the GCs webpage will be done by a small subcommittee of the SC.
2. When that action is complete the SC will invite suitable researchers to write a Newsletter contribution with a review on each of the GC.

It was agreed that the GC subcommittee will comprise of Xiangyu Hu (GC1), Angelo Tafuni, Ben Rogers, Salvatore Marrone (GC4), Matthieu de Leffe (GC5), and will be led by Angelo Tafuni.

Ben Rogers will check with the current GC leaders listed on the webpage if they wish to continue to be involved.

Action: Review of GCs and update of GC webpage
By: GC subcommittee: Xiangyu Hu (GC1), Angelo Tafuni, Ben Rogers, Salvatore Marrone (GC4), Matthieu de Leffe (GC5)

Deadline: Next SC meeting

Action: Check with the current GC leaders listed on the webpage if they wish to continue to be involved

By: Ben Rogers

Deadline: Next SC meeting

SPHERIC Scientific Committee (Renato and All)

RV stated that email responses to accept being part of the Scientific Committee were still coming in, and sharing the list of Scientific Committee members with the SC will be done in a few weeks. Following this the list of Scientific Committee members will be published.

Action: Share list of Scientific Committee members with the SC

By: RV

Deadline: End of 2023?

Action: Publish list of Scientific Committee members

By: Angelo Tafuni, Giuseppe Bilotta

Deadline: January 2024?

1-day Event on structures (Tom and others)

Tom De Vuyst on the 1-day event on structures with a draft title “New SPH developments for Solid Mechanics”. The event will be in-person, and use invited speakers. For this event four to eight speakers will be invited, and this one day event will be split over two days (starting in the afternoon on day one and concluding at lunchtime on day two) in January 2025. The event and the exact dates will be announced at Santa Fe workshop and the Berlin workshop.

Action: Agree on exact dates and announce at Berlin workshop

By: Tom De Vuyst

Deadline: January 2024

Presentation of Slack for SPHERIC (Pierre Sabrowski)

Pierre Sabrowski introduced Slack to the SC, showed how the SPHERIC slack page could be organised, and explained the rationale for using SLACK. Following a discussion on access rights the SC agreed that access would be only to people from SPHERIC member institutions, and that Institutions would provide SPHERIC with a list of email addresses when applying for membership. RV proposed that for existing members the nominated contact person would provide a list of email addresses for their institution.

Giuseppe Bilotta queried why we do not use a forum instead of slack. RV has tried this in the past but there were issues, with spam amongst others.

One potential issue with using SLACK is that answers may receive a wrong answer and that this could reflect badly on the SPHERIC community and SPHERIC SC. Ben Rogers stated that the SC should be willing to take that risk.

Tom De Vuyst pointed out that if messages are deleted automatically after 90 days that would be a problem if topics have a longer lifetime than 90 days.

Giuseppe Bilotta, Salvatore Marrone and Nathan Quinlan stated that the same objectives can be achieved with a forum.

Angelo Tafuni and Ben Rogers stated that it could help the SPH community, particularly less vocal members, to engage.

Social media channels (All)

RV raised a concern about the use of X, and recommended opening an official LinkedIn channel for SPHERIC. RV also proposed the SC appoints a social media manager. Pierre Sabrowski volunteered to do this, but only management of channels not content creation. Antonio Souto-Iglesias is happy for Pierre Sabrowski to take over. The SC approved.

Pierre Sabrowski will set up a LinkedIn account. LinkedIn and X will have same contact. Giuseppe Bilotta suggested to also create a Mastodon account. Pierre Sabrowski agreed and will look into this.

Action: Create LinkedIn account, look into Mastodon account

By: Pierre Sabrowski

Deadline: next SC meeting

Action: Transfer X account to Pierre Sabrowski

By: Antonio Souto-Iglesias, Pierre Sabrowski

Deadline: next SC meeting

Benchmark test cases (Salvatore and All)

Ben Rogers commented on the much improved new benchmark webpage.

Currently there are no specific solids and structures benchmarks. For Geotechnics applications Giuseppe Bilotta will look into providing a new benchmark and Ben Rogers will contact Huo? Bin. Angelo Tafuni pointed out that the benchmark on Kevin Helmholtz Instability, which is common in the Astrophysics community, is still empty. For Astrophysics benchmarks Daniel Price and the developers of SWIFT will be contacted, they will also be asked about the Kevin Helmholtz Instability benchmark. Pengnan Sun proposed a benchmark on collapse of bubbles which is commonly used outside the SPH community. Alex Crespo pointed out that researchers should be encouraged to mention the GCs in their publication, but this message does not appear for each benchmark. The possibility of adding a DOI for each benchmark was discussed. Ben Rogers stated that the University of Manchester use Figshare to do this.

Action: Contact Ha Bui for geotechnics benchmark

By: Ben Rogers

Deadline: next SC meeting

Action: Propose geotechnics benchmark

By: Giuseppe Bilotta

Deadline: next SC meeting

Action: Contact Daniel Price and developers of SWIFT for Astrophysics benchmark

By: Salvatore Marrone?

Deadline: next SC meeting

Bibliography

Antonio Souto-Iglesias proposed to remove the bibliography item as with current databases and search facilities there is now little value in maintaining a specific SPH database. The SC agreed. Instead Ben Rogers proposed to update a list of relevant journals, books, and a list of important SPH review papers. The list of relevant journals will be removed and replaced by a list of review papers.

Action: Create list of review papers
By: Abbas Khayyer and Angelo Tafuni
Deadline: next SC meeting

Newsletter (Giuseppe Bilotta)

Giuseppe Bilotta informed the SC that the next Newsletter will have a contribution about the Zhuhai workshop (Pengnan Sun), SPH Online V (Abbas Khayyer), a 2nd announcement on SPHERIC 2024 workshop, the guidelines for review of SPH papers (Abbas Khayyer), the DualSPHYSICS workshop. RV pointed out that two steering committee members stepped down and that they normally are interviewed for a Newsletter. RV will invite one for interview for the current Newsletter and the other for the next Newsletter. Nathan Quinlan also proposed to invite Tricco and Price to write a contribution on their SPHERIC workshop paper with “negative result” (approaches tried were unsuccessful), as this is quite unusual.

It was agreed that contributions should be requested by Giuseppe Bilotta within one month with an objective to have all contribution by the 15th of January 2024.

Action: Request Newsletter contributions
By: Giuseppe Bilotta
Deadline: 15 December 2023

Action: Contact stepped down SC members for interview
By: RV
Deadline: 15 December 2023

Action: Invite Tricco/Price to prepare contribution to Newsletter
By: Giuseppe Bilotta?
Deadline: 15 December 2023

A.O.B.

Alex Crespo proposed to highlight the annual SPHERIC workshop in the list of forthcoming events on the SPHERIC webpage to make it stand out from other events. The SC agreed.

Action: Decide how to best highlight the annual SPHERIC workshop in the list of forthcoming events on the SPHERIC webpage
By: Angelo Tafuni
Deadline: ?

3. Summary of Actions from this Steering Committee Meeting

Action 1: Complete Gresho vortex benchmark
By: Georgios Fourtakas
Deadline: next SC meeting

Action 2: Complete solid mechanics benchmark
By: Tom De Vuyst
Deadline: next SC meeting

Action 12: Organise 2025 SPHERIC workshop at UPC, Barcelona, Spain
By: Corrado Altomare

Deadline: 2025

Action 13: Share the conference webpage developed for the Rhodos workshop with Corrado Altomare

By: Georgios Fourtakas

Deadline: Next SC meeting.

Action 14: Write document outlining SPHERIC workshop process

By: Ben Rogers, Corrado Altomare

Status: not completed

Action 15: Organise a 1 day event “New SPH developments for Solid Mechanics” in early 2025

By: Tom De Vuyst

Deadline: early 2025

Action: Publish Berlin Workshop and call for abstracts

By: Pierre Sabrowski and Giuseppe Bilotta (official SPHERIC channels), All (individual contacts and social media channels)

Deadline: First call early December, second (and last call) one week before deadline of 19 January 2024 (Abstract submission deadline)

Action: Publish Berlin Workshop and call for abstracts

By: Pierre Sabrowski and Giuseppe Bilotta, All

Deadline: 19 January 2024 (Abstract submission deadline)

Action: Publish Zhuhan Workshop web page as soon as possible.

By: Pengnan Sun

Deadline: ASAP

Action: Advertise Zhuhan Workshop on social media.

By: All

Deadline: After Announcement on Berlin Workshop

Action: Create leaflet on Zhuhan workshop to include in Berlin Workshop welcome pack.

By: Pengnan Sun

Deadline: Berlin Workshop

Action: Prepare Newsletter contribution on Zhuhan workshop.

By: Pengnan Sun

Deadline: For Publication in Summer Newsletter

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By: Corrado Altomare

Deadline: 2025 Workshop

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By: Ben Rogers

Deadline: 2025 Workshop

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Action: Invite Joe Monaghan Prize nominees to provide a 5min presentation on their paper
By: Ben Rogers?
Deadline: 2025 Workshop

Action: Contact Chun Hean Lee to present proposal for a 2026 SPHERIC workshop in Glasgow at the next SC meeting in Berlin
By: RV
Deadline: ?

Action: Review of GCs and update of GC webpage
By: GC subcommittee: Xiangyu Hu (GC1), Angelo Tafuni, Ben Rogers, Salvatore Marrone (GC4), Matthieu de Leffe (GC5)
Deadline: Next SC meeting

Action: Check with the current GC leaders listed on the webpage if they wish to continue to be involved
By: Ben Rogers
Deadline: Next SC meeting

Action: Share list of Scientific Committee members with the SC
By: RV
Deadline: End of 2023?

Action: Publish list of Scientific Committee members
By: Angelo Tafuni, Giuseppe Bilotta
Deadline: January 2024?

Action: Agree on exact dates and announce at Berlin workshop
By: Tom De Vuyst
Deadline: January 2024

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Deadline: next SC meeting

Action: Transfer X account to Pierre Sabrowski
By: Antonio Souto-Iglesias, Pierre Sabrowski
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By: Giuseppe Bilotta

Deadline: next SC meeting

Action: Contact Daniel Price and developers of SWIFT for Astrophysics benchmark

By: Salvatore Marrone

Deadline: next SC meeting

Action: Create list of review papers

By: Abbas Khayyer and Angelo Tafuni

Deadline: next SC meeting

Action: Request Newsletter contributions

By: Giuseppe Bilotta

Deadline: 15 December 2023

Action: Contact stepped down SC members for interview

By: RV

Deadline: 15 December 2023

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By: Giuseppe Bilotta?

Deadline: 15 December 2023

Action: Decide how to best highlight the annual SPHERIC workshop in the list of forthcoming events on the SPHERIC webpage

By: Angelo Tafuni

Deadline: ?