Pencil Code Steering Committee Meeting

June 10th, 2019

Minutes (written by Wladmir)

Participants: Axel, Nils, Wolfgang [WG], Matthias, Wladimir [W]

Agenda

I) Election of new chair;

Matthias: Has been chair for a year now, should rotate.
Nils: Why not continuing with the current one. Should Matthias continue?
Axel: proposes Nils.
Nils: More opinions?
Axel: New chairman should be elected at the end of meeting.

At the end of the meeting Matthias will conduct the election of the new chair.

II) GFAD Pencil Code special issue

Axel: There are 11 papers, 4 of which are accepted or have appeared already. Axel led two papers, one accepted and one to be accepted, within weeks.

Matthias: Is there a special reason why this has taken so long?

Axel: People and referees are busy. Matthias' paper for instance, it's been taking over a month for it to be accepted. Axel thinks we can push people into sending their contribution. There's a possibility of the issue still coming up this year.
[Axel's skype got a bit choppy 9 min into the talk;]

Axel will email the editors to see if the issue can still come out this year.

One of the authors of one of the earlier papers got a bit discouraged by the referee report; it was not very positive about the importance of the work and so forth. "Realistics simulations" was judged not realistic, for instance. It is now resubmitted it. The editor wanted a referee that is as independent as possible – these may be people who may never heard about the Pencil Code, who don't feel an urgency, and then the refereeing does not get done.

Wlad: Can the papers and the referee reports be shared? It would be a good resource for the people who are still writing them to have an idea about how the articles should be. Sharing referee report may not be possible, due to confidentiality.

Axel: They are in this link
https://www.nordita.org/~brandenb/pencil-code/PCSC/SpecialIssue/

Should they be review / methods papers, or research papers? These papers should be regular refereed research papers. They all have research in them. But they are method papers in the end.

Matthias: Axel can write on behalf of the committee. Matthias can write the authors on behalf of the committee as well, there's a strong desire to see this issue out this year.

III) Transition to Fortran 2003

Matthias: Right now fortran90 is mandatory because most features will break otherwise. But some functionality requires fortran 2003, like the Yin Yang grid. Should we switch to f2003 and abandon backward compatibility?

Axel would prefer to make it like a module because; if we moved to f2003, some people wouldn't be able to use their favorite compilers any more. However, making 2003 optional/switchable would mean implementing everything twice. Matthias says f90 now is old and for more modern compilers we're losing on stuff like modern coding practices, though not on performance.

All agree that people should simply install the new compilers.

There's some perception out there that the Pencil code is old and slow, but changing to f2003 may not dispel that. A code comparison would be more efficient.

Wlad: We can make it like Athena and Athena++, we can have Pencil and Pencil2003.

Matthias: Would lead to two branches.

Wlad: Is that a problem? Pencil90 would simply die when a 2003 version happens. So why do we care if some people keep using f90?

Matthias: Other opinions?

Wolfgang: Not a fan of allocation structures in f2003, they would bring back segmentation faults. Should find a solution for Axel, but it's strange that the old compilers are even still running.

[Discussion on compilers.]

M: It would be much easier if we could use directives instead of having switchable modules. Pencil doesn't like preprocessing statements.

WG: How would that help, you would still need to implement things twice. It wouldn't change the fundamental question.

M: Yes, but we wouldn't increase the number of files.

WG: What modules are we talking about, only the Yin-Yang? HDF5?

M: In the moment ,yes. Some new implementation would affect boundconds.

WG: Forking boundconds sounds like a nightmare.

M: Could try to encapsulate.

A: Is there anything systematically difficult? All we want is something that works with this or that.

M: All is possible, but it creates work and overhead. We don't really need it.

A: Wouldn't it be just one extra piece of work.

M: My point exactly. Question postponed again?

WG: We could try to ask.

W: That's a question indeed for all developers, not just the committee.

A: True.

IV) GPU acceleration

M: We now have a GPU accelerated code. A master student working with Matthias has finished this testing. There's a code, Astaroth, that we could replace the core of pencil with the core of this code. Code comes from both Astaroth and pencil code repos. Meshing two codes together, using git. The student can work on it during the summer. Everything needed to run a simulation is in the GPU code (MHD, entropy, hydro, density). Provides a library and a domain specific language which is a high level programming language, one can use for implementing other modules, like passive scalars. Would be able to get a factor 10, but not the theoretical limit. Unclear if it is close to the theoretical limit of GPU acceleration.

N : Gpu acceleration is a great feature that we should strive to get.

W: Agreed.

M: Would like to start with that this week, since not much time to work on it Matthias is soon leaving for summer too.

WG: Solution is to define the Astaroth code to be a submodule of Pencil code. Code

will be pulled from both repos (GitHub and BitBucket).

All agreed on using submodule technique.

V) Minor things

A: User meeting, in August, will it be possible? Week shift debated, but not anymore. Someone should give a review about the code in the meeting.

A: Why aren't certain people who issue pull requests not made regular committers?

W: That person is not changing the code, but added python script and config files for a sample.

N: Another person was actually a regular committer.

A: So how are the changes going through?

W: First change went through the pencil code discuss, and Phillip accepted it. The other one I received as an invitation to merge. It would indeed be simpler if she was a regular committer.

A: Next, is everyone happy with the Travis-ci.com tests?

A: A number of people are using the code and we don't keep in touch with them.

W: Wouldn't the pencil code discuss list be this issue?

A: We only have 1 female owner. Are we doing something wrong?

M: Does the percentage of female owners match the percentage of female committers?

A: Apparently not, 1 owner in 14, users is more like between 20%.

W: Tokenism starts to disappear when there's 30% representation.

A: What can we do to recruit more women? Promote some of the female users to owner?

A: Git -> how safe are we now with the bridge?
N: We can make it foolproof.
WG: Is it still a problem? No email has been seen in yrs about the bridge.
A + M: yes, the bridge still has problems.

A: using git on windows;
M: how can windows guarantee that git is always used with –rebase;
A: It's the svn;

M: But it's not windows, it's the git.

M: Can we enforce the –rebase
WG: I think one can configure it. Each user needs to configure it for each checkout.
M: We should enforce it.
WG: We should code a git pc update.
All agree
A: Ok, that's something for WG to agree.

2020 meeting: where should it happen – Greece/NM? Ask Fabio if he can host it in Greece?
2021 meeting: New Mexico?

Vote:

2.5 votes Matthias
1.5 vote Nils

Matthias re-elected, and we decided on a 2-term limit for the chair.