



ASPERA Common Call

ET R&D

Networking and R&D for the Einstein Telescope



Meeting Minutes

WP1	WP2	WP3	WP4	MC	GM	Other
					X	

Title of the Meeting:	Fifth general ET R&D Meeting, Telecon,
hyperlink:	
Date:	13/09/2013
Location (or phone)	phone

Participants

01	Harald Lück (author of the notes)	02	Vaishali Adya
03	Ronny Nawrodt (author of notes)	04	Stuart Reid
05	Iain Martin	06	Tomasz Bulik
07	Michele Punturo	08	Valentin Rudenko
09	Matteo Barsuglia	10	Jerome Degallaix
11	Stefan Hild	12	Jo van den Brand
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Agenda

- 1) Frequency of meetings
- 2) Current status of WPs
- 3) AOB (ET symposium)

1.) Frequency of meetings

It was agreed upon that the frequency of meeting before the summer break of 1 per month was too high. We settled for a frequency of about once every two month: Michele suggested to merge the ET R&D meetings with ELiTES meetings. This will not only minimise the number of necessary teleconferences but also maximise the scientific exchange between all members of the ET science team. This suggestion was welcomed by all participants of this teleconference.

Status of WPs:

WP1: Sathya could not be present in this telecon and sent his report by mail:

Here is the status report. We have been coding up to assess how well ET will be able to test the no-hair theorem (Amsterdam, Birmingham and Cardiff). This is an extension of the work we did for non-spinning black hole binaries but now including non-precessional spin effects. The initial results are pretty encouraging.

ET mock data challenge (Amsterdam, Nice, Cardiff) has progressed somewhat slowly. Over the summer we worked on building a mock galaxy catalog that is valid up to about 750 Mpc and has some 2.5 million galaxies. We used this to assess how well advanced detectors and ET will be able to measure cosmological parameters without EM counterparts. This catalogue used Virgo Millennium simulations (this is not the Virgo detector but Virgo Cosmology Collaboration) and so it is quite realistic in terms what we might find on the sky. However, the catalogue is really not quite deep for the purpose of ET as we would like a box of the size of $z=2-4$. We don't quite know how to solve the problem of building such a mock catalogue yet.

We haven't had a telecon for a long time and I don't quite know what other groups have been doing. I will be in a better position to report on the progress of WP1 at our next telecon after talking to various partners.

It was discussed that it is important to push for a WG1 report before the ET symposium in October. So far there are only very few participants registered from working group number one. We should ask Sathya to advertise the symposium within his group.

WG2:

Tomek and Jo: WP2 2 held a meeting on August 14 in Amsterdam. Site selection studies were planned, overviews were given, and lots of discussions held. A list of places to study was made. The working group discussed details on seismic sensors and other hardware and agreed that Nikhef will develop, construct, and provide the hardware needed for doing long-term seismic surveys on selected sites. Nikhef and Warsaw will collaborate on making sensors which will be considerably cheaper than the Triliums that are used now. Nikhef can provide four Triliums and Rome another few, which will allow having one for each investigated site. The next meeting of the working group will be in Hannover. The first prototypes are planned within the first quarter of 2014. This will leave enough time for long term seismic measurements during the remaining duration of the project.

Istvan handed in a proposal for funding for setting up a local group contributing to WP2 in Hungary. We agreed that the minutes of all working group meetings should be put in the ET database.

Valentin:

Fulvio discussed with Valentin the possibility of performing measurements in Russia in the Baksan mine. Fulvio will bring some equipment to Baksan in November and will stay there for 2 weeks to do some short-term measurements.

There will be some discussion with Jo to agree on a common data format.

WG3:

Ronny:

There has not been working group internal call for quite a while. This will be done soon. Possibly next week.

Birefringence: Hannover has done some early measurements. The full interpretation of the results have not yet been done. He now looks into the spatial distribution of local dopants in various samples, which have an influence on the electrical and optical properties. This work will be continued.

Valentin: Michael G. Is currently at Caltech, hence not much progress has been achieved. Michael is trying to purchase a laser. Ronny suggested that it may be easier to perform some of the experiments in Hannover or Jena instead of trying to get the laser. Initial results might also help getting financial support for the laser in Russia.

Iain:

Glasgow started doing the first simple birefringence measurements. Stuart will supply coatings for new samples. The e-beam evaporated coatings, even with the new plasma source for bombarding the coating with ions, may not yield the same level of stress as ion been sputtered coatings show. The level of stress of the e-beam evaporated coatings remains to be determined but will probably be lower.

Silicon absorption: Glasgow is still trying to improve the sensitivity. In some measurement in increased absorption at the sample surface could be observed. This work is done in collaboration with Hannover.

WP4:

Hannover hired a new PhD student for working package 4: Vaishali Adya. She will work on optical simulations for the Einstein telescope, like setting up a thorough optical layout and deriving control signals especially for low frequency ET.

Michele reported that Gabriele Vajente developed a package for modeling interferometers including radiation pressure: MIST. We will invite Gabriele to the ET symposium.

ET Symposium: The ET symposium will last for two full days. It will start in the morning of the first day and terminate in the afternoon of the second.

We will set a deadline for financial support ending in about ten days, to encourage people to register in time.