

## Minutes of the WP2-meeting on the thermal noise data base.

23/03/2009 11:00 CET

Attendants:

francesco.piergiovanni@uniurb.it,

[r.nawrodt@physics.gla.ac.uk](mailto:r.nawrodt@physics.gla.ac.uk),

[j.franc@lma.in2p3.fr](mailto:j.franc@lma.in2p3.fr), [n.morgado@lma.in2p3.fr](mailto:n.morgado@lma.in2p3.fr),

[michele.punturo@pg.infn.it](mailto:michele.punturo@pg.infn.it), [r.flaminio@lma.in2p3.fr](mailto:r.flaminio@lma.in2p3.fr),

[ettore.majorana@roma1.infn.it](mailto:ettore.majorana@roma1.infn.it),

[fulvio.ricci@roma1.infn.it](mailto:fulvio.ricci@roma1.infn.it)

[leone.bosi@pg](mailto:leone.bosi@pg.infn.it)

[paola.puppo@roma1.infn.it](mailto:paola.puppo@roma1.infn.it)

Agenda:

- 1) Check procedures of the formulas and related documentation
- 2) data base tool and parameter collection
- 3) Software tool and interface with the data base ( Mat-Lab ==>> GWINC ??)

- 1) We reviewed the status of the modeling activity carried on in several groups and the cross-check procedure. Mainly for the thermal noise associated to the suspension Piergiovanni, Michele and Paola are converging in the production of an internal note where they summarize the model and related formulas. They will report results for the room temperature case of the Advanced detector. The note will be ready in a time scale of two weeks from now.
- 2) Concerning the mirror thermal noise the Lyon group is preparing a ET note where they will summarize and discuss the reference formulas and report data collected in literature for the various materials. They are checking with the Glasgow group the consistency of their analytical approach. The note will be realized in a time scale of two weeks from now.

- 3) Concerning the software tool, we agree to use the GWINC code developed on Mat Lab environment. Once the notes will be ready we have to find a volunteer who takes care to implement the corresponding software changes. In parallel to that we agree to prepare a comprehensive document that will act as Physics reference of the available software tool. The starting point will be the previous notes.
- 4) For the thermal noise data base, as first step we need to list the physics (mechanic and optics) parameters in function of the temperature to be included in the data base. Paola will take care of preparing a first draft of the list and she will circulate it among us to collect reactions and suggestions.
- 5) Starting from the list Leone will set up the data base infrastructure that we will host for the moment in the Virgo Data Base providing its public access. The meeting ends by discussing the issue of the mirror dimensions and mass for ET. Silicon seems to insure the possibility to get pieces of 400 mm in diameter and masses higher than 100 kg with low absorption (fractions of ppm at  $\sim 1.4$  microns). However we have to continue the exploration for the use of different bulk materials.