

**Memorandum of Agreement
between the Virgo collaboration
and the Perugia group
for the participation to Virgo**

April, 2015

The purpose of this agreement is to describe the participation of the Perugia group to the Virgo collaboration. The period covered by this Memorandum is two year from the date of the VSC approval.

1. CNRS and INFN signed an agreement concerning the realization of an antenna, Virgo, for the detection of gravitational waves on 27 June 1994 in Pisa. Virgo consists of a three kilometre Fabry-Perot interferometric antenna aimed at the detection of gravitational waves in the frequency range 4 -10000 Hz. The construction, exploitation and data analysis of the Virgo antenna is under the responsibility of the Virgo collaboration, which has been defined in its present form in December 2001. The Virgo collaboration is represented by its Spokesperson. The operation of the Virgo antenna is supervised by the EGO Council.
 - The past involvements of the Perugia group are described in the previous MoA (see VIR-PLA-DIR-1000-232 and VIR-051A-07).
2. The current Perugia group responsibilities in Virgo are the following:
 - R&D, design, construction and maintenance of Virgo last stage suspension system: wires, clamps, spacers, monolithic solutions (responsible: Helios Vocca);
 - Structural characterization of amorphous and nanometer-layered glassy oxide composites as advanced materials for reduced thermal noise in optical coatings. (responsible: Flavio Travasso);
 - Investigation of possible extension to cryogenic operation. (responsible: Flavio Travasso);
 - Maintenance of the Virgo sensitivity curve. (responsible: Michele Punturo);
 - European projects (M.Punturo)

Remark: the group will provide adequate support for the proper operation and maintenance of the devices under its responsibility.

4. The current Perugia group contributions to Virgo working groups are the following:
 - Participation to R&D activities on thermal noise, new payload design (H. Vocca, D Vitali).
 - Participation to the study and characterization of new materials for suspensions and mirror coating (F. Travasso).
 - Test mass charging (H. Vocca, contact person with LIGO).
 - Participation to the Virgo commissioning, detector characterization and detector operation. (H. Vocca, F. Travasso, F. Baldaccini, M. Punturo).

- Participation to data taking shifts.

5. The current Perugia group composition is:

Name	FTE	Author	Student	Activity and thesis argument if any
Luca Gammaitoni (U)	40%	Yes	No	R&D on thermal noise, stochastic and nonlinear dynamics
Fabio Marchesoni (U)	60%	Yes	No	R&D on thermal noise, stochastic and nonlinear dynamics
Michele Punturo	100%	Yes	No	MAN on EU & International affairs
Flavio Travasso	100%	Yes	No	AdV (Monolithic suspensions)
Helios Vocca (U)	100%	Yes	No	R&D on coating thermal noise (20%), AdV (50% on Monolithic suspensions), MAN (30% Group Leader)
Igor Neri	30%	No	No	R&D on stochastic and nonlinear dynamics
Francesca Baldaccini	100%	Yes	No	R&D on coating thermal noise (20%), AdV (80% on Monolithic suspensions)
David Vitali (U)	40%	No	No	R&D on squeezing
Giovanni Di Giuseppe (U)	10%	No	No	R&D on squeezing
Stefano Zippilli	40%	No	Yes	R&D on squeezing
Mateusz Bawaj	40%	No	Yes	R&D on squeezing

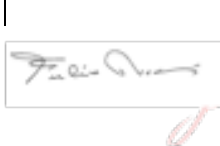
Remark: For a person who just joined the collaboration, the date in the author column is the date when the person will be added in the author list. This date is one year after the joining of the collaboration (except for student and postdocs who have defended their PhD less than two years ago, for whom there is no delay).

In the activity section the leading activity and the FTE are specified for each of the main categories: Advanced Virgo (AdV), Data Analysis (DA), Management (MAN) and Research and Development (R&D). Activities that cover several topics (like Commissioning) are put under Advanced Virgo operation.

The label (U) means: teaching duties. In that case, the FTE is computed on the research time.

The Perugia group leader will inform the collaboration of any change in the group composition and of any new thesis proposed.

Approved:



Digitally signed by Fulvio Ricci
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Date: 2015.04.06 09:21:35 +02'00'

Virgo collaboration Spokesperson



Perugia group Leader

01/04/2015

Date

01/04/2015

Date