Memorandum of Agreement between the Virgo collaboration and the Padova-Trento Virgo group for the participation to Virgo

April, 2015

The purpose of this agreement is to describe the participation of the Padova-Trento group to the Virgo collaboration. The period covered by this Memorandum is two years from the approval date of the VSC. This memorandum updates and replaces the previous one, which covered the period from Nov. 2009.

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 kilometer Fabry-Perot interferometric antenna aimed at the detection of gravitational waves in the frequency range 10-10000 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.
2. In Padova and in Trento there is a wide and long-dating expertise of scientists on experimental gravitation affiliated to INFN Section at Padova, INFN center TIFPA at Trento, University of Padova, University of Trento. The expertise comprises detector design, cryogenics, inertial sensors, displacement transducers, very low noise electronics, material characterization, interferometry, optical cavities, detector commissioning, detector characterization and data analysis.. The research activities for the VIRGO collaboration at Padova-Trento started in September 2007 and increased significantly since 2009.
3. The Padova-Trento group contributes to Virgo in the following domains:
   a) Data analysis. Padova-Trento contributes mostly on searches for transient signals by network of detectors, both by participating to the production of results of observations and by developing and testing new data analysis tools.
   b) Detector characterization. Padova-Trento contributes especially on noise hunting, including the investigation of non linear noise couplings.
   c) Advanced Virgo, SAT subsystem (new accelerometers for SR, conditioning and calibration of all accelerometers, motor controls and drivers for suspension control upgrades),
   d) Advanced Virgo, squeezed light source for Advanced Virgo (technical design report, second harmonic generation, PLL electronics of laser sources and control electronics, mode cleaners, Faraday opto-isolators). Co-chairman of the squeezer working group (Zendri);
   e) commissioning and operation of the detector (also through the analysis of technical and scientific data, i.e. detector characterization).
   f) participation to data taking shifts.

   Moreover, since January 2015 two physicists of Parma University and INFN Gruppo Collegato, Parma, joined the group: their affiliation to Padova-Trento is motivated by the research topic (DA burst group) and it is not expected to change in the short term.

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

4. The current Padova-Trento group composition is:

Name	FTE	Position	end term	Author	Main activity
Giovanni Andrea Prodi (U)	0.8*	Associate Professor Univ.TN	permanent	yes	(V 10%) Group leader, (DA 40%) Burst Group searches, detector characterization (AdV 30%) support of activities of the local group
Gabriele Vedovato	1.0	INFN PD technologist	permanent	yes	DA 100% Burst Group, detector characterization
Jean Pierre Zendri	0.8	INFN PD researcher	permanent	yes	AdV 80% squeezed light source, accelerometers
Livia Conti	0.4	INFN PD researcher	permanent	yes	AdV 40% squeezed light source
Marco Bazzan	0.4*	Researcher Univ. PD	permanent	yes from June 2015	AdV 40% squeezed light source
Roberto De Pietri (U)	0.5*	Associate Professor Univ.Parma	permanent	yes from Jan 2016	DA 50% burst group, detector characterization
Claudio Salomon	0.2	Technician UnivTN	permanent	no	AdV 20% motor control for SAT
Roberto Graziola	0.1	Techinician UnivTN	permanent	no	AdV 10% motor control for SAT
Massimo Gennara	0.2	Technician UnivTN	permanent	no	AdV 20% motor control for SAT
Luciano Modanese	0.3	INFN technician	permanent	no	AdV 30% electronics, accelerometers
Marino Nicoletto	0.1	INFN PD technologist	permanent	no	AdV 10% electronics
Matteo Pegoraro	0.2	INFN PD technologist	permanent	no	AdV 20% electronics
Lisa Zangrando	0.5	INFN PD technologist	temporary, current term 2017	yes from May 2015	DA 50% grid computing
Alessandra de Feo	0.5	Post doc Univ Parma	temporary, current term July 2015	yes from Jan 2016	DA 50% burst group
Matteo Leonardi	1	PhD Univ. TN	student	yes	AdV 100% squeezed light source
Maria Concetta Tringali	1	PhD Univ. TN	student	yes from Jan 2015	DA 100% burst group
Marco Vardaro	1	PhD Univ. PD	student	yes from Jan 2015	AdV 100% squeezed light source

Remarks:

- * personnel with teaching and university duties: the reported FTE refer to the time fraction

dedicated to research;

- It is understood that for a person who joins the collaboration, the date which makes effective his/her authorship, is one year after his/her joining of the collaboration (except for students and postdocs where there is no delay). The authorship starting date reported in the table is the effective one and takes into account this rule.
- In the activity section the leading activity and the FTE are specified for each of the four main categories: Advanced Virgo (AdV) and Data Analysis (DA). Activities that cover several topics (like group leader) are put it under Virgo operation.

The Padova-Trento group leader will promptly inform the collaboration of any change in the group composition and of any thesis proposed.

Approved:

Digitally signed by Fulvio Ricci
DN: cn=Fulvio Ricci, o=Università di Rome La Sapienza, ou=Dipartimento di Fisica, email=fulvio.ricci@uniroma1.it, c=IT
Date: 2015.04.12 11:32:55 +02'00'

VIRGO collaboration Spokesperson

01/04/2015
Date

Padova-Trento group Leader

01/04/2015
Date