



VIRGO COLLABORATION REPORT

Gianluca Gemme
Virgo spokesperson

VIRGO COLLABORATION

- 900 members, 594 authors, 154 institutions from 18 Countries
- 37(+1) groups
 - 34 full members (including EGO scientific group)
 - 3 in the probatory period (CIEMAT Madrid, INFN-Torino, Milano Bicocca)
 - 1 new group (TBC): Virgo-Brazil
 - Preliminary contacts with HEPHY-Vienna and University of Geneva
- 8 Countries represented in the Virgo Steering Committee (so far)
 - Italy, France, The Netherlands, Spain, Belgium, Poland, Greece, Hungary



V. Fafone



L. Rolland



S. Hild



M. Martinez



G. Bruno



T. Bulik



N. Stergioulas



D. Barta

ELECTIONS/APPOINTMENTS

- Deputy Spokesperson: V. Sordini (IP2I Lyon)

- Commissioning coordinator: M. Was (LAPP)
 - Deputy commissioning coordinator: D. Bersanetti (INFN-Genova)

- Chair of the Speakers committee: E. Tournefier (LAPP)

- Core program committee: C. Van Den Broeck (Utrecht, chair)
 - Deputy chair: A. Viceré (Firenze/Urbino)

- Diversity, Equity and Inclusion working group: A. Miller (Nikhef)

- Early Career Scientists (ECS) chairs: Lucia Papalini (INFN-Pisa), Jishnu Suresh (BelGrav)
 - ECS representatives in the VSC: Sophie Bini (Padova/Trento), Marion Pillas (ARTEMIS)

VIRGO OPERATIONS DIVISION

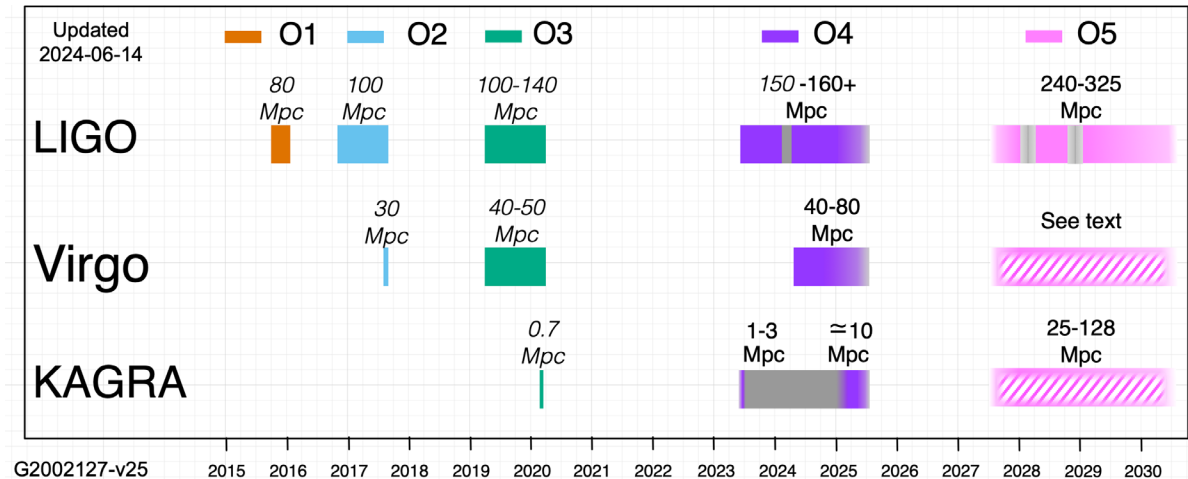
- The Virgo Operations Division exists to organize and manage all Virgo activities related to, and necessary for, detector operation
- The Virgo Operations Division is led by the Run coordinator of the Virgo collaboration
- It comprises the
 - Detector Characterization,
 - Calibration,
 - Low Latency,
 - Computing and Software, and
 - Open Data Working Groups
- The LVK Operations White Paper describes the planned activities for these efforts
- Further details on the planned activities in collaboration between the DetChar and Calibration groups and the four LVK DA working groups can be found in the LVK Observational Science White Paper
- **Approved by VSC: [VIR-0554A-24](#)**

NEW VIRGO GROUP: VIRGO-BRAZIL

- Draft MoA received from a group of researchers from five universities in Brazil led by Márcio Eduardo da Silva Alves, Universidade Estadual Paulista "Júlio de Mesquita Filho", and Iara Tosta e Melo, affiliated with the University of Catania, Italy
- The proponents interacted with Chris Van Den Broeck and with several coordinators to define their proposed contribution
 - Data analysis (MMA, test GR, cosmology, SGWB)
 - DetChar (RRT, ML)
- Initial impression and feedback from coordinators is positive
 - Some concerns about potential organizational issues and integration of the group within the collaboration due to geographical localization of most members
- VSC discussion (June 6): some concerns
 - about the proposed composition of the group. In particular, about the proposed small number of authors, despite the fact that many members would qualify for authorship
 - about the connection of one member of the group with the Instituto Tecnológico de Aeronáutica (ITA), an institution of higher education maintained by the Brazilian Air Force
 - **The VSC decided to gather more information before making a decision**

OPEN DATA POLICY

- **O4b will end on Jun 9, 2025**
(4 months of extension)
 - Start of O5 → June 2027
- Open data release plan updated:
 - End of August 2025 → O4a data release
 - **End of September 2026*** → O4b data release
- ✓ Larger gap between first and second data release
- ✓ Enough time before start of O5



- *NSF is concerned that the proposed modification to the release schedule is going *“the wrong direction”*. Need convincing arguments for a modified proposal, perhaps:
 - **2026-08-09**: release 2024-04-10 to 2025-06-09 (i.e. release 14 months of data after 14 months of proprietary time with a goal to get to 12 months of data after 12 months of proprietary time in O5 and beyond)
 - DA working groups are asked to think on this and prepare proposal. Tentative timeline: “before the end of the summer.”
- We need to "elevate" this discussion to the level of funding agencies
- Memo with some context and background made available to the Council

VIRGO EVOLUTION: ACTIONS

- Appointment of three members for the implementation committee:
 - Gianluca Gemme (SP), Viola Sordini (DSP), Tjonnie Li (non-EGO)
- In parallel, start internal revision of the bylaws → Virgo Early Career Scientists (slide 8)
- Foster internal discussion about reorganisation and IGWN → Virgo evolution «task force» (slide 9)

THE VECS AND VIRGO EVOLUTION

- The Virgo evolution process will likely imply a partial revision of the bylaws
 - Checkpoint was needed anyway after ~1.5 years
- It is important that early career scientists are actively involved in the life of the collaboration
 - To learn more about the collaboration in which they work
 - To produce concrete proposals to improve its functioning (keeping an eye on the reorganization and IGWN processes)

- Autonomous and independent organization
 - Collect names of representative(s) from each group
 - Can seek input from any Virgo member
 - VECS liaison(s) in the Virgo evolution task force
- Tentative timeline:
 - Draft in fall
 - Final document with proposals by the end of the year

VIRGO EVOLUTION «TASK FORCE»

➤ Role and missions

- Organize and animate a wide debate within the Virgo Collaboration for what concerns both the EGO/Virgo implementation and the transition from LVK to IGWN
- Discuss practical details and concrete possibilities, in addition to general ideas and directions
- Collect and digest ideas from the collaboration and strive towards building consensus around possible proposals
- Formulate proposals and produce useful feedback for the EGO/Virgo reorganization committee and to the IGWN committee

➤ Membership

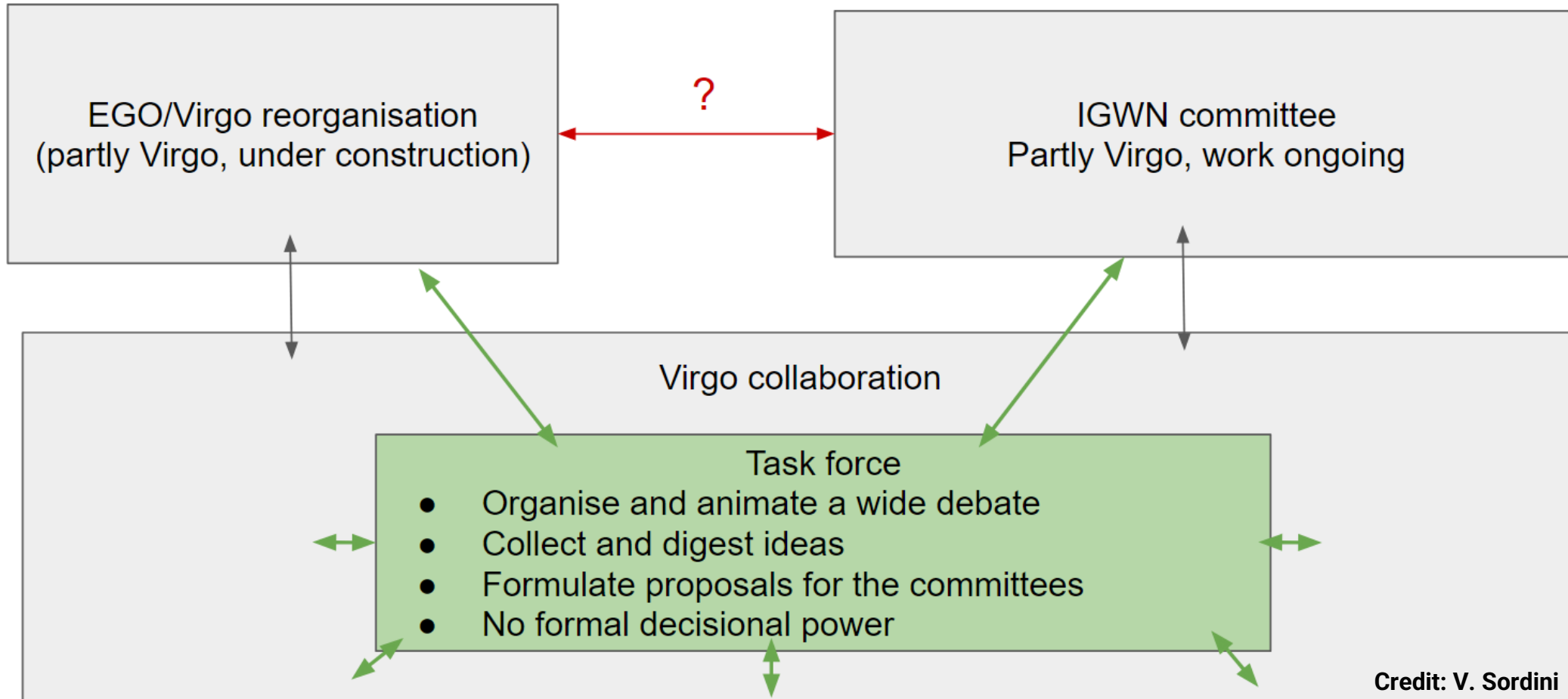
- V. Sordini (chair), representatives from the “Lessons learned” committee, representatives from the implementation committee, representatives from the IGWN design committee, early career scientists representatives
- Additional members can be added

➤ The task force should produce a first report by the September LVK week and a second one by November Virgo week

FOSTER INTERNAL DISCUSSION ABOUT REORGANISATION AND IGWN



Gray = in place
Green = proposed



Credit: V. Sordini

«LESSONS LEARNED» IN ADV+ PHASE 1 AND VIRGO EVOLUTION

- Committee appointed to try to find convergence among the various contributions:
Vocca (chair), De Laurentis, Mantovani, Nardecchia, Rolland
 - The committee may involve and seek input from anyone it deems appropriate
- Mandate:
 - Identify the important points of agreement, and the important points of disagreement
 - Prepare a collaboration-wide discussion where we will discuss these different points and try to converge as far as possible on conclusions (Virgo week, June 6)
 - Write a **summary document** that will be submitted to the VSC (tentative timeline: end of July)
- It would be great if this effort can become part of the “Virgo evolution” process
 - **Liaison in the “task force”**
 - Document providing **concrete proposals** for the implementation and IGWN committees

EINSTEIN TELESCOPE AND VIRGO

- R&D activities that could plausibly result in technical options for future upgrades of the Virgo detector and its computing environment are considered a part of the scientific program of the Collaboration
 - List of V_nEXT R&D tasks synergic with ET(-HF) identified (high power operation, improved quantum noise reduction, improved coatings, seismic and Newtonian noise, mitigation of technical noises, ...)

- STAC report, Nov 23: *“European coordination of ground based gravitational wave projects is instrumental for success and must be achieved at the level of funding agencies, with ideally an overall long-term development and funding plan that covers both, EGO/Virgo and ET.”*
 - High-level, systemic coordination still insufficient
 - Strong concerns from possible increase of ET-related activities/pressure in the coming months

- Report from ET Pathfinder STAC:
 - A more explicit planning effort to support Virgo, between EGO, Virgo, ET, and ETPF (along with other major ET R&D efforts), appears to be needed and is strongly recommended by the ETPF STAC
 - Meeting this morning with Virgo folk to communicate the utility of the ETPF effort in this domain for the stable-cavity design work and to understand contribution for the upgrade