

Report to GWIC: Toward the “global network”

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- New collaborative activities
- Openings for the future
 - » General principle: Expansion clause from preamble of the Virgo-LIGO MOU
 - » Bar-ifo discussions
- Is there any ongoing role for bilateral data analysis agreements?
 - » position of the Virgo-LIGO MOU
 - » Scientific merit

- IGEC-2 paper
 - » Improved upper limit, coincidence methodology
- MOU between Virgo and LIGO/LSC (incl. GEO)
 - » Approved in early 2007
 - » Data sharing provisions went into effect on 18 May 2007
 - Virgo joins S5
 - Data analysis groups are working together, exchanging data
 - » Two joint collaboration meetings have been held already (5 per year are scheduled)

Virgo-LIGO MOU is open to new participants

From the preamble:

“We enter into this agreement in order to lay the groundwork for decades of world-wide collaboration. We intend to carry out the search for gravitational waves in a spirit of teamwork, not competition. Furthermore, we remain open to participation of new partners, whenever additional data can add to the scientific value of the search for gravitational waves. All partners in the collaborative search should have a fair share in the scientific governance of the collaborative work.”



LIGO Principles of L-V collaboration: basis of adding new projects?



From the Virgo-LIGO MOU:

“... a collaboration between independent projects, not a merger. Each project will maintain its own separate governance.”

“There will be no LSC-only or Virgo-only gravitational wave data analyses.”

How to link bars and interferometers in the global network?

Discussions have been under way for some time.

Several modes of collaboration under discussion.

From the IGEC-2 paper:

“The role of the resonant bar observatory is significant to search for signals occurring whenever the network of the more sensitive interferometric detectors is not fully operative and therefore not able to issue an autonomous detection of a gw candidate.”

“IGEC-2 can collaborate with the other observatories to extend the time coverage of current gw surveys and can contribute to the identification of rare gw events.”

Role of bars in study of a strong candidate signal?

The IGEC-2 paper continues:

“A joint investigation bar-interferometer could increase the information on the gw candidate, for instance on the signal direction and polarization amplitudes. To take the most from an hybrid bar-interferometer observatory, the data analysis methodology should overcome the intrinsic limitations of a time coincidence search and exploit the phase information of the $h(t)$ data streams provided by the different detectors, aiming at the solution of the inverse problem for the wave tensor.”

Neither LSC nor Virgo will negotiate new bilateral agreements

“All subsequent collaborative data analysis work with projects other than LIGO or VIRGO will be negotiated by and carried out by the LSC and VIRGO together; prior agreements will remain in force automatically only for data collected earlier.”

Action items

- Move bar-interferometer discussions forward to a successful conclusion.
- Keep all channels of discussion open with other potential members of the global network as new projects move forward.
e.g., Australia, Japan, and perhaps China

GWIC can play a key role as a forum for these discussions.