

Identity Management for the LIGO Project

Part One: Collaboration Background

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February 17, 2011
LIGO-G1100123-v1



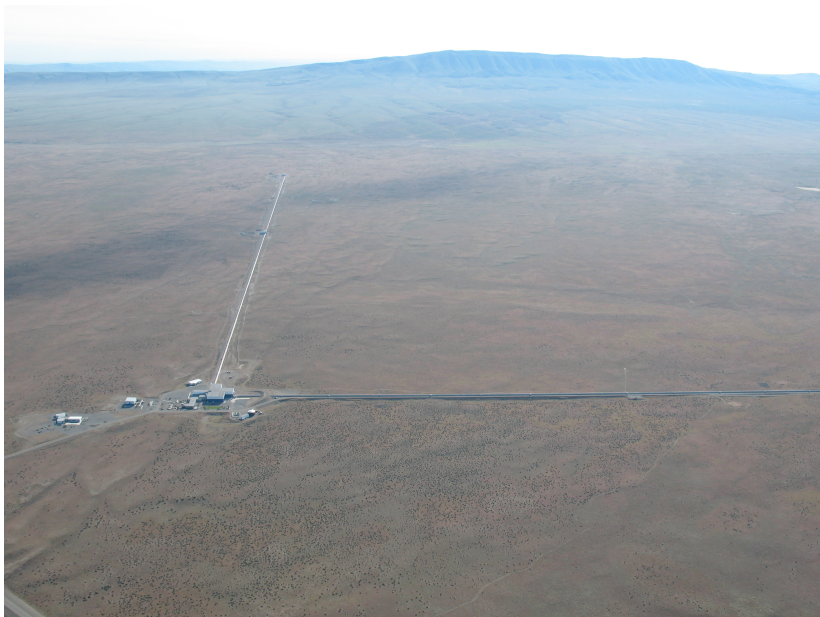
LIGO Science Mission

LIGO, the Laser Interferometer Gravitational-wave Observatory, seeks to detect gravitational waves – ripples in the fabric of spacetime. First predicted by Einstein in his theory of general relativity, gravitational waves are produced by exotic events involving black holes, neutron stars and objects perhaps not yet discovered.

Who we are...

('cause it's complicated and puts demands on our tools)

LIGO Hanford, WA



LIGO Hanford, WA



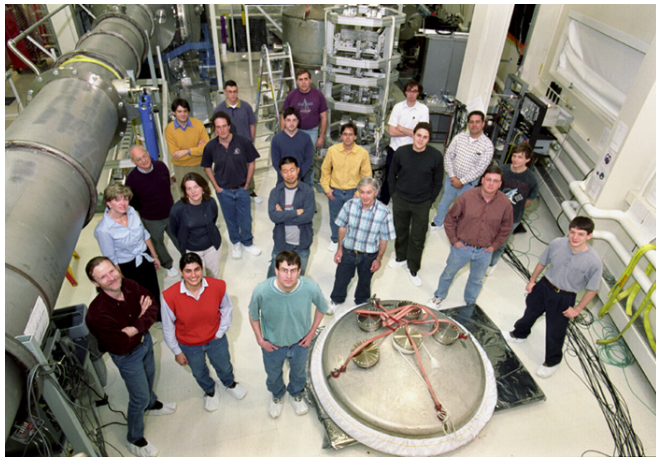
LIGO Livingston, LA



LIGO Livingston, LA







LIGO Laboratory =
LIGO Caltech + LIGO MIT +
LIGO Hanford Observatory +
LIGO Livingston Observatory

LIGO Scientific Collaboration

The LIGO Scientific Collaboration (LSC) is a self-governing collaboration seeking to detect gravitational waves, use them to explore the fundamental physics of gravity, and develop gravitational wave observations as a tool of astronomical discovery. The LIGO Scientific Collaboration was founded in 1997 and currently has nearly 800 members from 70 institutions worldwide.

LIGO LIGO Scientific Collaboration LSC



CIC institutions in LSC



LIGO Scientific Collaboration

The LSC is an open collaboration. Anyone who is interested in contributing to the mission of LIGO may apply to join the LSC. Groups joining the LSC are welcome to participate in all LSC activities. As members of the LSC, groups have access to the LIGO data for scientific purposes, can participate in collaboration meetings and working group meetings, can represent the LSC at external scientific meetings and to the public, and have representation on the LSC Council, the governing body of the collaboration.

LIGO Scientific Collaboration

...groups prepare and sign Memoranda of Understanding (MOU) with the LIGO Lab and the LSC outlining the group's role in the LSC as well as specific research plans for the coming year...

LIGO Laboratory and the LSC

Some, *but not all*, members of the LIGO Lab are members of the LSC

“Groups” join the LSC

(some groups more structured than others)

GEO600 interferometer, Hannover, Germany



GEO600 Members



- ▶ Gravitational Physics Group, University of Birmingham
- ▶ Gravitational Physics Group, Cardiff University
- ▶ Institute for Gravitational Research, University of Glasgow
- ▶ Max-Planck-Institut für Gravitationsphysik (Albert-Einstein-Institut), Potsdam
- ▶ Max-Planck-Institut für Gravitationsphysik, (Albert-Einstein-Institut), Hannover

All members of the GEO600 project are members of the LSC

On the other end of the spectrum...

CalState Fullerton LSC Group



(Josh)

LSC or LIGO?

Internally and almost always when presenting our external face we simply call ourselves

“LIGO”

GW community is larger than LIGO...

Virgo interferometer, Cascina, Italy



Virgo and the LSC

Virgo members are *not* members of the LSC

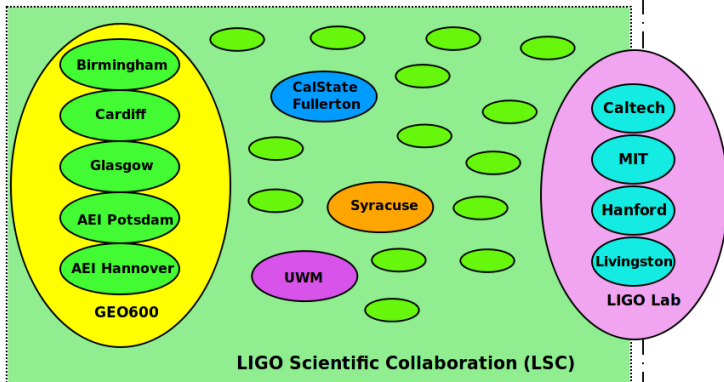
Virgo and the LSC

Virgo and LIGO...

- ▶ share access to data
- ▶ share access to computing resources

Joint body is “LIGO/Virgo Community” or LVC

LIGO/Virgo Community (LVC)



LIGO Scientific Collaboration (LSC)



VIRGO

Why is membership important?

- ▶ access to data
- ▶ names on papers

Two items scientists care about *intensely*

Today...

- ▶ > 850 current and active members
- ▶ Single authoritative roster of members
- ▶ Single LIGO identity for each member