

# Welcome to ODW2021!

- This is the 4<sup>th</sup> LIGO-Virgo Open Data Workshop
- 2<sup>nd</sup> that happens remotely
- However....we've prepared a virtual space to make this experience as realistic as possible
- Great feedback...150 registered participants!

# THE GWOSC website



Gravitational Wave Open Science Center

🏠 Data ▾ Software ▾ Online Tools ▾ About GWOSC ▾

The Gravitational Wave Open Science Center provides **data** from gravitational-wave observatories, along with access to **tutorials** and **software tools**.

**Gravitational Wave Open Science Center**  
<https://www.gw-open-science.org>



LIGO Hanford Observatory, Washington  
(Credits: C. Gray)



LIGO Livingston Observatory, Louisiana  
(Credits: J. Giaime)



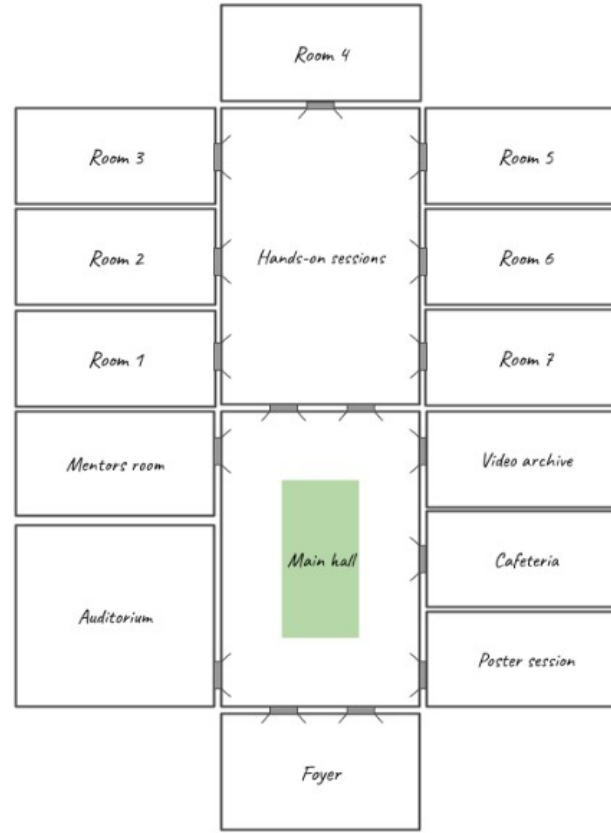
Virgo detector, Italy  
(Credits: Virgo Collaboration)

🌟 **O3a data available!**

# Virtual ODW

- Connection instructions
- sent to participants

ODW 2021 - Workshop space map



**Foyer:** is the entrance hall where you start the first time you connect to the ODW 2021 gather.town space. There is an “info point” where you can find assistance in case of troubles or suggestions about how to get oriented

**Main hall:** this space connects all the main areas of the workshop. Head there if you get lost. You will likely meet a lot of people there. Feel free to use one of the private areas on the sides (couches) or at the center (pic-nic tables) of this area]

**Auditorium:** although the plenary sessions will be held on Zoom, it is always useful to have one. Also, there you will find the link to the Zoom sessions. Just enter the room and click “x” on your keyboard. A projector on the stage will highlight and you will be redirected to the Zoom call

# Agenda

- Plenary Sessions start at **7:00 AM UTC**
- Please check the Time Zone

## Day 1 (10 May 2021)

Plenary Session starts at 7:00 UTC ([Link to TimeZoneConverter](#))

- **07:00:** Workshop Welcome (Massimiliano Razzano)
- **07:15:** Introduction to LIGO/Virgo detectors (Eleonora Capocasa)
- **08:00:** Accessing public gravitational data using the GWOSC website (Agata Trovato)
- **08:30:** Short Break
- **08:40:** Gravitational-wave Data Quality and the GWpy package (Laura Nuttall)
- **09:25:** Introducing the hands-on sessions and tutorials (Massimiliano Razzano)
- **09:40:** Plenary Session end

### Hands-on sessions

- **Session A:** 12:00- 13:30 UTC ([Link to TimeZoneConverter](#))
- **Session B:** 22:30- 24:00 UTC ([Link to TimeZoneConverter](#))

## Day 2 (11 May 2021)

Plenary Session starts at 7:00 UTC ([Link to TimeZoneConverter](#))

- **07:00:** Introduction to GW results to far from CBC (Patricia Schmidt)
- **07:45:** Searches with PyCBC (Gareth Davies)
- **08:30:** Presentation of the data challenge (Massimiliano Razzano and Francesco Di Renzo)
- **08:40:** Plenary Session end

### Hands-on sessions

- **Session A:** 12:00- 13:30 UTC ([Link to TimeZoneConverter](#))
- **Session B:** 22:30- 24:00 UTC ([Link to TimeZoneConverter](#))

# Agenda

- Plenary Sessions streamed with Zoom
- (go to the Auditorium and press X)
  
- Talks will be recorded and made available at the Video Room
  
- By attending the talks you agree to be recorded and that the talk will be put online

## Day 3 (12 May 2021)

Plenary Session starts at 7:00 UTC ([Link to TimeZoneConverter](#))

- 07:00: Parameter estimation with Bilby (Shanika Galaudage)
- 07:45: GW and EM follow-up: working with Skymaps tools (Giuseppe Greco)
- 08:30: Announcements (Francesco Di Renzo)
- 08:40: Plenary Session end

### Hands-on sessions

- **Session A:** 12:00- 13:30 UTC ([Link to TimeZoneConverter](#))
- **Session B:** 22:30- 24:00 UTC ([Link to TimeZoneConverter](#))

## Day 4 (13 May 2021)

Plenary Session starts at 7:00 UTC ([Link to TimeZoneConverter](#))

- 07:00: Poster Session (hosted in our virtual Poster Session Room)
- 08:30: Session end

### Mentors Office Hours

- **Session A:** 12:00- 13:30 UTC ([Link to TimeZoneConverter](#))
- **Session B:** 22:30- 24:00 UTC ([Link to TimeZoneConverter](#))

## Day 5 (14 May 2021)

Plenary Session starts at 7:00 UTC ([Link to TimeZoneConverter](#))

- 07:00: Closeout Session
- 07:45: Final remarks and end of the workshop

# Let's start!

At the end of this session we will introduce the hands-on sessions

## **Enjoy the workshop!**

For any troubles/request, please send an email to

[gwosc@igwn.org](mailto:gwosc@igwn.org)

# Hands-on sessions

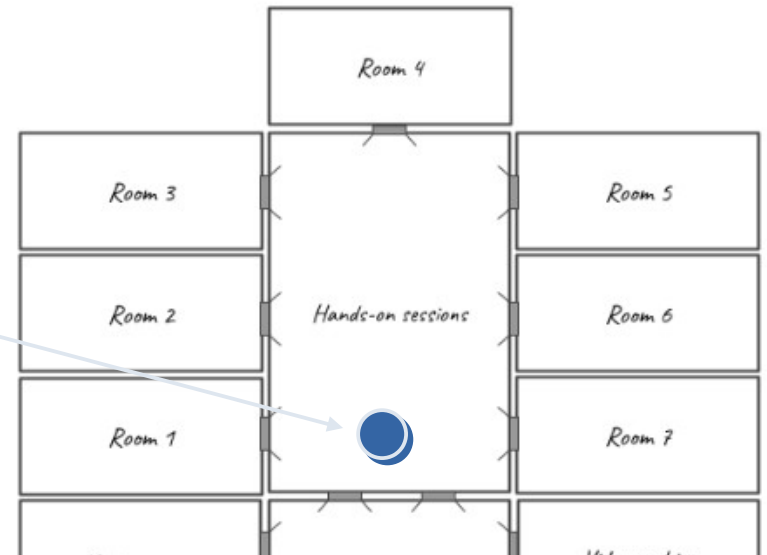
- 3 days of exercises on GW data analysis
- 25 mentors from LIGO and Virgo collaborations will assist you

Mentors assigned to each Hands-on group


Surname	Name	Group
Ashton	Greg	A1
Mastrogiovanni	Simone	A1
Hendry	Martin	A1
Dal Canton	Tito	A2
Chassande-Mott	Eric	A2
Ain	Anirban	A4
Bejger	Michal	A3
Nguyen	Quynh Lan	A3
Trovato	Agata	A3
Di Renzo	Francesco	A4
Greco	Giuseppe	A4
Goya	Srashti	A5
Davies	Gareth	A5
Biswas	Sumedha	A6
Gadre	Bhooshan	A6
Busicchio	Riccardo	A7
Galaudage	Shanika	A7
Karki	Sudarshan	B1
Kanner	Jonah	B1
Blackburn	Kent	B1
Weinstein	Alan	B2
Walker	Marissa	B2
Davis	Derek	B2
Beroiz	Martin	B3
Biscoveanu	Sylvia	B3

What is my group?

ODW 2021 - Workshop space map



# Hands-on sessions

- You will be able to run tutorials on Google Colab/MyBinder/your laptop
  - All the materials are stored in a Github repository
  - <https://github.com/gw-odw/odw-2021/>
  - Tutorial + Quiz sets
- 

Click links below to open tutorials in Google Colab

- [Tuto 1.1](#)
- [Tuto 1.2](#)
- [Tuto 1.3](#)
- [Tuto 1.4](#)

## [🔗](#) Quiz Questions

- [Quiz 1.1](#)
- [Quiz 1.2](#)
- [Quiz 1.3](#)
- [Quiz 1.4](#)

## [🔗](#) More documentation

- [gwosc client](#)
- [GWpy home page](#)



# Hands-on sessions

## 🔗 Day 1 hands-on session

[Day 1 tutorials](#)

### 🔗 Topics:

- Discover Gravitational Wave Open Data
- Introduction to GWpy: the TimeSeries class. Plotting and simple data manipulation
- Spectral analysis, FFTs, PSDs, and time-frequency representation of the signals. The  $Q$ -transform
- Working with segments lists and Timelines
- Plot spectrograms to identify glitches, signals, and hardware injections
- GW signals from Compact Binary Coalescences (CBCs)

**Enjoy the hands-on sessions!**