

<https://indico.in2p3.fr/e/gw-odw2>

Gravitational wave Open Data Workshop #2

Paris, April 8-10 2019

AstroParticule & Cosmologie
Paris Diderot University

*Three-day workshop to learn how to access and
analyze LIGO and Virgo data*

<http://www.gw-openscience.org>



Challenge

- **The 1st goal is to have fun !**
- Be in the situation where you don't know what the data are

Challenge missions

Challenges are ordered by difficulty. You are rewarded a number of points that scales with the difficulty of the challenge. You can try to solve the challenge in the order you like. Starting with the most difficult is risky but you get a big reward if you succeed by the end of the session!

<https://github.com/gw-odw/odw-2019/blob/master/Challenge/CHALLENGE.md>

Challenge 1 (1 point) – Novice

- Identify a loud binary black hole signal in white, Gaussian noise

Challenge 2 (2 points) – Rookie

- A binary black hole signal in colored, Gaussian noise

Challenge 3 (4 points) – Intermediate

- A loud BBH signal in real O2 data

Challenge 4 (8 points +) – Advanced

Find all « injections » in real O2 data! But don't make false detections!

Notes : The time labels in the data files are not GPS time. **T0 can be negative**. Make sure quote times with respect to the correct time origin!

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You have complete freedom on the method, and you can use your own analysis tools.

Prize !

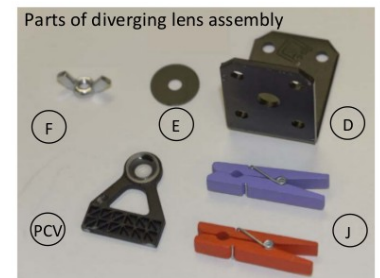
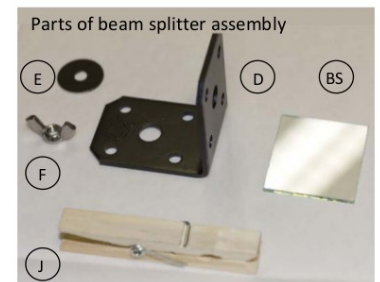
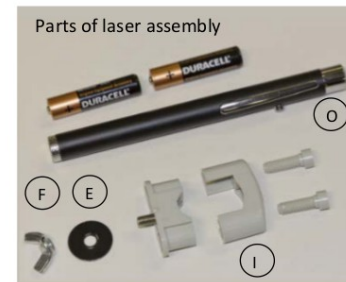
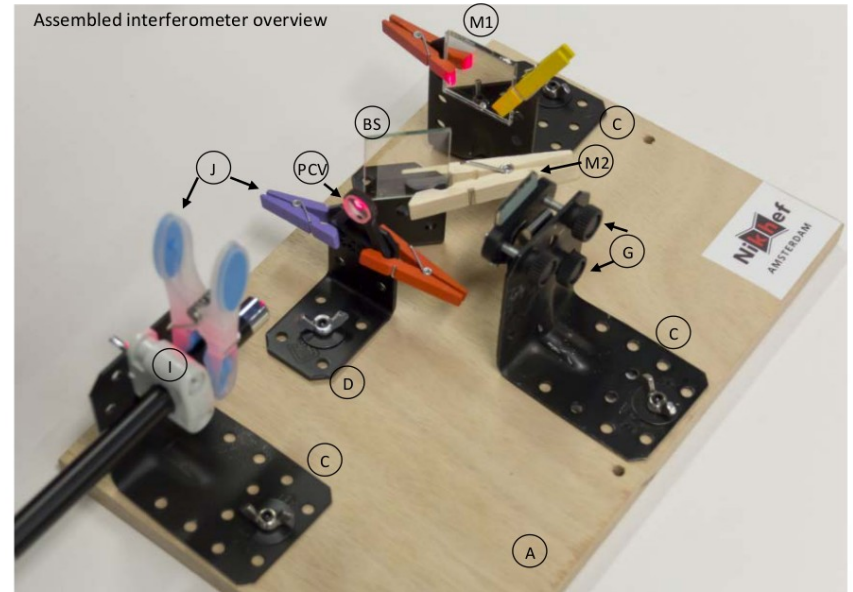
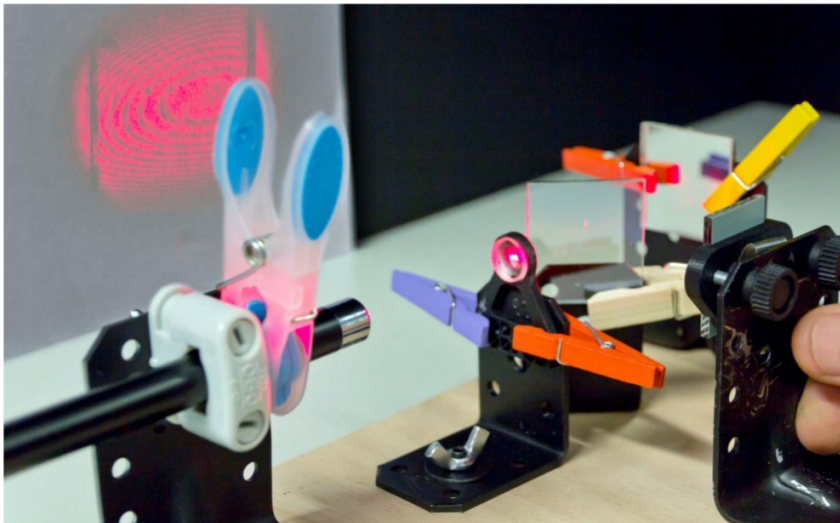


Hands on precision physics
with low-cost components

Michelson Interferometer construction kit

instruction manual

Assemble your own detector
and
measure sub-micrometer vibrations
and possibly even ...
gravitational waves



Register your team

- You can team up with others
- Please connect here and register your team :

<https://bit.ly/2WRxjay> – Tab « Challenge »

[Put a team label in front of the names of your team mates]

Challenge starts now !

- Data are here: <https://dcc.ligo.org/LIGO-T1900135/public>
- Rooms: 454A, 412B (small), 437A (small), 646A (bigger)
- End time: 12:30
 - For challenges 1-3, report your progress and results to a member of the organizing team
 - For challenge 4, report in the spreadsheet
- We will all reconvene at that time in 454A for the final results

May gravity be with you !



Cardboard VR



Visualize GW skymaps in 3D !!!

Usage instructions
will be provided by Giuseppe Greco



<https://dcc.ligo.org/LIGO-T1900181/public>