

# REINFORCE



## Update of WP3 "Gravitational Waves"

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REINFORCE Meeting, Jan 16, 2020



European Commission

# Work Package 3 - Tasks

- T3.1 – Data selection and preparation
  - Choose optimal data
  - Filter in frequency and whitening
- T3.2 – Development of data analysis tools
  - Prepare data representation visual and audio
  - Develop machine learning algorithms to classify and run regression
  - Sonification of data
- T3.3 – Development of citizen science core project
  - Develop citizen science task and advertise it
- T3.4 – Comparative analysis of citizen science results with the automatic analysis
  - Provide feedback to the users, ranking and self-evaluation

# WP3 – Developing the demonstrator

## ● **Where we are/what we have**

- h(t) data from LIGO/Virgo, open data release up to O2
- Lots of noise types (transients and nontransients) in our data
- GravitySpy as great model project for GW & citizen science.  
Great feedback from citizens
- Zooniverse platform and tons of projects

## ● **Our desiderata**

- A deeper understanding of noise types and sources
- Identification and localization of different noises
- Powering the noise studies with auxiliary channels in a more systematic way

# WP3 – Ideas and plans

## ● Our key points

- Add sonification to the visual representation (preliminary discussion with Beatriz, Wanda et al.)
- Define the data format/selection
- Develop the demonstrator on Zooniverse
- Move beyond classification of images. Add selection of image region for training object detection
- Show aux channels to help determine correlation

## ● Plans for development

- Start periodic set of meetings
- Prepare a platform dedicated to the development of the project
- Advertise postdoc positions. First coming in the spring 2020