

IGRAV status report

International Gravitational-wave Outreach Group

18th IPPOG Meeting
CERN 28-30 November, 2019

Nicolas Arnaud (narnaud@lal.in2p3.fr)
Laboratoire de l'Accélérateur Linéaire (CNRS / UPSud)
European Gravitational Observatory (CNRS & INFN)



Start of the project

- **Spring 2018: 15th IPPOG meeting** in Pisa
 - A full day at the European Gravitational Observatory (**EGO**) in Cascina
→ Host site of the Virgo experiment
- **Joint session** with representatives from **LIGO**, **Virgo** and **EGO**
 - **Direct detection of gravitational waves**
 - **Multimessenger astronomy**
- **Threefold goal**
 - **Get to know each other**
 - **Exchange about outreach**
 - ◆ Same goals
 - ◆ Different culture
 - ◆ Different resources
 - **Learn from IPPOG**
 - ◆ History, construction over years
 - ◆ What worked / why
 - ◆ Advices / difficulties / workarounds

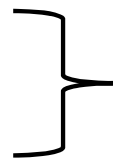
14:30 → 16:30 IPPOG Session 3 - Visitors Welcome - chair Nicolas Arnaud	
14:30	Welcome from the EGO director Speaker: Stavros KATSANEVAS (CNRS/IN2P3)
14:45	Welcome from the Virgo Spokesperson Speaker: Jo van den Brand
15:00	IPPOG Presentation Speaker: Hans Peter Beck (Universitaet Bern (CH)) IPPOG Pisa 20 Apr ...
15:15	Outreach at Virgo Speaker: Severine Perus (European Gravitational Observatory) Outreach IPPOG Ap... Outreach IPPOG Ap...
15:30	Outreach at LIGO Speakers: Amber Henry (LIGO lab (Hanford)), Cathy Holt (LIGO lab (Livingston)), Martin Hendry (LIGO) IPPOG_hendry.pdf IPPOG_hendry.pptx
15:45	Open Discussion <ul style="list-style-type: none">▪ similarities and differences between HEP and GW outreach▪ what can we learn from each other▪ how can we help each other▪ can we work on common projects▪ how to keep in touch on the long term

Start of the project

- Outcome very positive for both communities
→ GW community should develop its own flavor of IPPOG
- Quite a challenge!
 - No reference place like CERN
 - A wide range of experiments
 - ◆ Searching for different types of gravitational waves
 - ◆ Using different detection methods
 - ◆ At various stages of maturity / sensitivity
 - ◆ Of different sizes
 - First detections attracted the attention of media and general audience worldwide
 - ◆ GW170817: a true gift from Nature
 - At the same time: still consolidating / developing ground-based detectors
 - ◆ Network
 - ◆ Open public alerts
 - ◆ Sensitivity / duty cycle / upgrades
 - ◆ Timely publications before data become public
 - ◆ etc.



One year of brainstorming

- Where and when to meet?
 - July 13th 2019: the day after the end of the Amaldi 13 conference in Valencia (SP)
 - ♦ Amaldi conferences organized every second year: ‘equivalent’ of ICHEP/EPS
 - ♦ General relativity theory conference in parallel this year – GR22
 - ♦ Free registration, part of the regular Amaldi13/GR22 registration form
 - How often?
 - Twice a year: one remote meeting, one in person at a major conference
 - List of experiments / agencies / bodies to contact
 - LIGO-Virgo driving the early stages of the project
→ Want to reach out / go beyond

Moving forward
w/o being too pushy
 - Meeting agenda
 - Motivation
 - Working groups: what structure for this new body? How to bring it to life?
 - Projects able to federate people from different origins
 - Name and acronym...
- Monthly meetings from early 2019 onwards – attendance: 5-10 people

Kick-off meeting

- Saturday July 13th 2019: the day after the end of the Amaldi 13 / GR 22 Conference
 - <https://indico.ego-gw.it/event/29>
- Much less participants than registrants
 - Registration maybe too easy through the main registration form
 - But motivated group
 - ◆ Majority from LIGO-Virgo but other experiments represented as well



Kick-off meeting

- Morning agenda
 - Setting the stage
 - Example of IPPOG
 - Preparatory work for the afternoon sessions

First International Gravitational Waves Outreach Group Meeting

Saturday 13 Jul 2019, 09:00 → 18:00 Europe/Madrid

Botanical Garden of the University of Valencia

Description The organisers are committed to making this meeting productive and enjoyable for everyone involved. Be professional and respectful. Allow everyone the chance to speak. Step Up, Step Back: Be mindful of taking up much more space than others. On the same note, empower yourself to speak up when others are dominating the conversation.

Registration

10:00 → 10:30

Welcome coffee break

⌚ 30m

10:30 → 11:15

Introduction

10:30

Welcome and meeting Information

Speaker: Dr Isabel Cordero

IGWOG isa.pdf

10:40

Why are we here today?

Speaker: Nicolas Arnaud

20190713_introNA....

10:55

Overview of gravitational-wave outreach

Speakers: David Blair, Martin Hendry

IGOG_Hendry.pdf

11:15 → 12:00

The IPPOG Collaboration

IPPOG: the International Particle Physics Outreach Group

Speaker: Dr Steve Goldfarb (IPPOG co-chair)

Goldfarb-IPPOG-20...

12:00 → 12:30

Breakout sessions: Organizing breakout sessions

⌚ 45m

See morning session for the list of groups and conveners

Breakout group acti... Breakout group part... Breakout session re... International Gravita...

Kick-off meeting

- Afternoon
 - 2 breakout sessions
 - Different sets of subgroups
 - Summary of the group discussions

13:30 → 14:30		Breakout sessions: Breakout sessions (1/2)	
		See morning session for the list of groups and conveners	
		Breakout group acti... Breakout group part... Breakout session re... International Gravita...	
13:30	Communication	<div>Masterclasses Social media Talk to a scientist Visits and virtual visits Websites</div> <div>Speakers: Dr David Keitel, Dr Ryan Lang</div>	<div>🕒 1h 📍 Auditorium () </div>
13:30	Formal education & evaluation	<div>Primary, middle and high schools</div> <div>Speakers: Magdalena Kersting, William Katzman</div>	<div>🕒 1h 📍 Hort de Tramoieres () </div>
13:30	Outreach to under-represented groups	<div>Speakers: Jeff Hazboun, Livia Conti</div>	<div>🕒 1h 📍 Seminar () </div>
14:30 → 15:30		Breakout sessions: Breakout sessions (2/2)	
		See morning session for the list of groups and conveners	
		Breakout group acti... Breakout group part... Breakout session re... International Gravita...	
14:30	Art and science, science festivals	<div>Speakers: Dr Isabel Cordero, Joey Shapiro Key, Paul Baker</div>	<div>🕒 1h 📍 Seminar () </div>
14:30	Multi-messenger astronomy outreach collaborations	<div>Speakers: Dr Chris North, Zsuzsa Marka</div>	<div>🕒 1h 📍 Hort de Tramoieres () </div>
14:30	Organization structure for IGOG	<div>Funding Mailing list(s) Meetings: telecons and in-person Membership Name Structure</div> <div>Speakers: Nicolas Arnaud, Dr Steve Goldfarb (IPPOG co-chair)</div>	<div>🕒 1h 📍 Auditorium () </div>
15:30 → 16:15	Share out from breakout sessions and discussion		<div>🕒 45m </div>

Kick-off meeting

- Conclusion
 - Todo list for the coming year

15:30	→ 16:15	Share out from breakout sessions and discussion	🕒 45m	✎
16:15	→ 16:45	Coffee break	🕒 30m	
16:45	→ 17:45	Consensus on a path forward	🕒 1h	✎
<div>IGOG Path Forward</div> <div>Form working groups</div> <div>Communication</div> <div>Formal education and evaluation</div> <div>Outreach to underrepresented and underserved groups</div> <div>Art & science, science festivals, and informal education</div> <div>Organizational structure</div> <div>Multi-Messenger Astronomy</div> <div>Set up email lists</div> <div>IGOG email list</div> <div>Working group email lists</div> <div>Survey to IGOG members</div> <div>Current activities and projects</div> <div>Resources</div> <div>Current and potential EPO collaborations</div> <div>Recommendations to GWIC</div> <div>EPO sessions, activities, and training at science meetings</div> <div>Next meeting</div> <div>Thursday, January 16 approx noon Pacific</div>				
17:40	→ 18:00	Conclusions & Adjourn	🕒 20m	✎

Recent developments

- Convergence on name and acronym

IGRAV: International Gravitational-wave Outreach Group

→ Domain name bought

- **Website** igrav.org to be hosted at LIGO Livingston Observatory

- **Web tool development under discussion**: likely an CMS

- ◆ Then targeting a basic website as a start, providing the main info

- **Two mailing lists** created: <https://lists.igrav.org/cgi-bin/mailman/listinfo>

- **Open to anyone**

- ◆ [igrav-announce](https://lists.igrav.org/cgi-bin/mailman/listinfo): 86 members

- ◆ [igrav-discuss](https://lists.igrav.org/cgi-bin/mailman/listinfo): 66 members

- **Mission statement**

The mission of IGRAV is to engage people throughout the world in exploring the exciting field of gravitation, and in particular gravitational-wave and multi-messenger astrophysics. IGRAV will accomplish this mission through the creation, sharing and dissemination of a variety of educational and outreach materials.

Recent developments

- **Working groups and activities** – one or two conveners each
 - Communications
 - Formal Education & Evaluation
 - Outreach to Under-Represented and Under-Served Groups
 - Art and Science Collaborations
 - Science Festivals
 - Organizational Structure
- **Calendar**
 - Working group meetings in January
 - Working group leads meeting in April
 - Face-to-face meeting the day after the end of the LISA Symposium in Glasgow
 - ♦ Saturday July 25, 2020
- **Structure hosting IGRAV**
 - Natural choice: The Gravitational Wave International Committee (GWIC)
 - ♦ But not a legal entity – we'll have a relationship with them though
 - Another possibility, currently being investigated:
The International Society on General Relativity and Gravitation (ISGRG)

Outlook

- Quite some progress since the initial trigger, during the April'18 IPPOG meeting
- Structure taking shape
 - Name, acronym, mission statement, mailing lists, hopefully a website soon
- IGRAV does not exist yet
 - Goal is to make it real by the July'20 F2F meeting in Glasgow
- Looking forward
 - for the first IGRAV deliverables
 - to working with IPPOG and other outreach groups
- Special thanks to
 - Isabel Cordero-Carrión: Virgo Valencia group, Virgo outreach group,
main organizer of the Valencia kick-off meeting
 - Amber Strunk: LIGO-Hanford Observatory Education and Outreach Coordinator,
kingpin of our regular IGRAV meetings