



QFT-GRT 2021

A quick introduction



Idea behind QFT-GRT

- **Quantum Physics** and **Representation theory** have always enjoyed a close relationship. Recent developments have brought new vigor to this interaction
- Physicists and Mathematicians often arrive @ the same **Geometric objects** starting with different motivations. These play an important role in this interaction.
- It was felt that a meeting that falls somewhere in between summer school and a large conference would be a great way to introduce exciting new research and to bring new/young researchers into the subject
- We also wanted to encourage **dictionary building** between math and physics.
- Hence the format : Mix of **mini-courses** and **research talks** split roughly 50:50 between the two subjects aimed at a **mixed audience**.

Idea behind QFT-GRT

- A lot of untapped potential exists in terms of research interactions between theoretical physics and mathematics especially in this area.
- This sequence of meetings could function as a spark for furthering such interactions
- **ICTS was a natural place** for organizing such a meeting .

QFT-GRT 2018

First edition



Quantum Fields, Geometry and Representation Theory

16 July 2018 to 27 July 2018



QUANTUM FIELDS, GEOMETRY AND REPRESENTATION THEORY

This ICTS discussion meeting will bring together physicists and mathematicians working on exciting problems at the interface of Supersymmetric Field Theories and Geometric Representation Theory. There will be several mini-courses by leading experts and there will also be a small component involving research talks by some of the participants. The program is aimed at helping young and established researchers learn the foundational aspects of these research fields and also at establishing new and lasting conversations between physics and mathematics communities. For more details, please check the webpage.

The Mini Courses will be delivered by –
Sergey Cherkis (University of Arizona)
Tudor Dimofte (University of California, Davis)
Jacques Distler (University of Texas, Austin)
Ron Donagi (University of Pennsylvania)
Sergei Gukov (Caltech)
Lotte Hollands (Heriot-Watt University)
Michiaki Inaba (Kyoto University)
Takuro Mochizuki (RIMS, Kyoto)
Tony Pantev (University of Pennsylvania)
Masa-Hiko Saito (Kobe University)
Piotr Sulkowski (University of Warsaw)

**16–27
July, 2018**

VENUE
**Madhava Lecture Hall,
ICTS, Bangalore.**

DEADLINE FOR SENDING APPLICATIONS
30 April, 2018

PROGRAM WEBPAGE
www.icts.res.in/discussion-meeting/qftgr2018

CONTACT US
qftgr2018 @icts.res.in

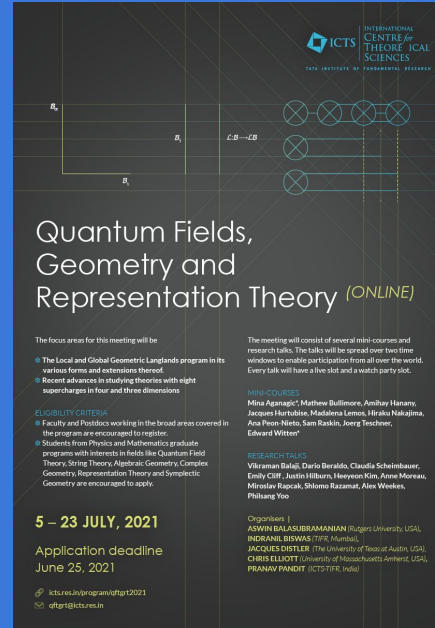
QFT-GRT 2021

Continuing in the same spirit

We have **10 mini-courses** and **12 research talks** this time spread over 3 weeks.

New feature : Two copies of the meeting happening in two different windows.

We also felt it would be appropriate to honor M. S. Narasimhan and C. S. Seshadri : **Special Event on Monday July 12**



INTERNATIONAL CENTRE for THEORETICAL SCIENCES
THE INSTITUTE of MATHEMATICAL RESEARCH

Quantum Fields, Geometry and Representation Theory (ONLINE)

The focus areas for this meeting will be

- The Local and Global Geometric Langlands program in its various forms and extensions thereof.
- Recent advances in studying theories with eight supercharges in four and three dimensions

ELIGIBILITY CRITERIA

- Faculty and Postdocs working in the broad areas covered in the program are encouraged to register.
- Students from Physics and Mathematics graduate programs with interests in fields like Quantum Field Theory, String Theory, Algebraic Geometry, Complex Geometry, Representation Theory and Symplectic Geometry are encouraged to apply.

5 – 23 JULY, 2021

Application deadline
June 25, 2021

icts.res.in/program/qftgtr2021
qftgtr@icts.res.in

The meeting will consist of several mini-courses and research talks. The talks will be spread over two time windows to enable participation from all over the world. Every talk will have a live slot and a watch party slot.

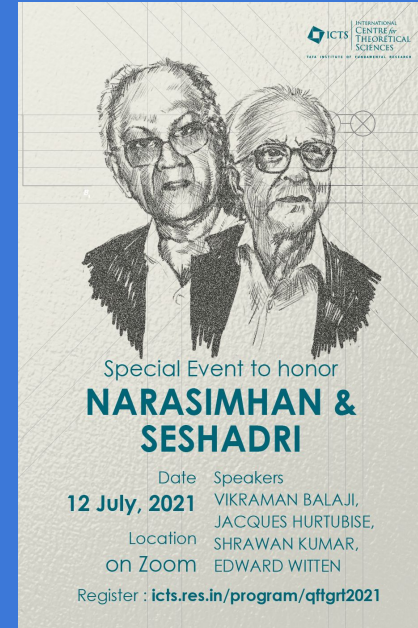
MINI COURSES

Mina Aganagic, Matthew Bullimore, Anthony Maruyama, Jacques Hurtubise, Madalena Lemos, Hironaka Nakajima, Ana Poon-Nieto, Sam Raskin, Joerg Teschner, Edward Witten

RESEARCH TALKS

Vikraman Balaji, Darío Berardo, Claudia Scheidegger, Emily Cliff, Justin Hilburn, Heeyoung Kim, Anne Moreau, Miroslav Rapcak, Shimo Kazama, Alex Weibull, Puhang Yao

Organizers :
ADWIN BALASUBRAMANIAN (Rutgers University, USA),
INDRANIL BISWAS (TIFR, Mumbai),
JACQUES DISTLER (The University of Texas at Austin, USA),
CHRIS ELLIOTT (University of Massachusetts Lowell, USA),
PRANAV PANDIT (ICTS/TIFR, India)



INTERNATIONAL CENTRE for THEORETICAL SCIENCES
THE INSTITUTE of MATHEMATICAL RESEARCH

Special Event to honor NARASIMHAN & SESHADRI

Date: **12 July, 2021**

Speakers:
VIKRAMAN BALAJI,
JACQUES HURTUBISE,
SHRAWAN KUMAR,
EDWARD WITTEN

Location:
on Zoom

Register : icts.res.in/program/qftgtr2021

Keeping up with QFT-GRT'21

Live talks in Eastern daytime have watch parties in
Western day time + v.v

Depending on your time zone, one of these windows
(or a mix of them) would be the ideal.

How to participate ?

1. Live talks over Zoom
2. Watch Parties over Zoom + Metastream
3. QFT-GRT Slack

Idea behind watch parties :

- LOTS of recorded lecture out there - not enough time to watch them!
- Watching together is likely to spark discussions, conversations
- Exciting new experiment - do participate!

SCHEDULE

Quantum Fields, Geometry and Repr 05 July 2021 to			
Welcome remarks by Prof. Rajesh Gopak			
Week 1 (July)			
Time (IST)	Time (UTC)	July 5, Monday	July 6, Tuesday
1100	530		Bullimore 1 (WP)
1400	830	Peon-Nieto 1	
1530	1000	Lemos 1	Lemos 2
2030	1500	Bullimore 1	Bullimore 2
2200	1630	Peon-Nieto 1 (WP)	Rapcak
(+1)0030	1900	Lemos 1 (WP)	Lemos 2 (WP)

Zoom Rules

To ask questions :

- During the main talk (-60+5 mins), post questions to the **chat box**
- Fellow participants can try to answer the questions
- If the speaker pauses to take questions, the chair can read out unanswered questions from the chatbox
- During the **Q&A period** (-10 mins) at the end, you can also use the “**raise hands**” feature in Zoom. The chair will recognize you and unmute you. You can then ask your question.
- When asking questions, we request you to switch on video if it is possible.
- We request you to be brief and clear in your questions
- Short and relevant comments are OK but no speeches/distractions.
- Questions can also be posted to Slack (for continuing discussions beyond Zoom)

Watch Party Rules

During a watch party :

- Leave the Zoom call running and join the Metastream session using the link provided (in **Zoom chat** + Slack channel called **watch-party-links**)
- Two windows @ the same time : Browser with metastream + Zoom chat. Suggestion : You can use **window tiling** .
- The watch party chair will pause/play the recorded video
- You can post questions to Zoom chat during the watch party.
- All other Zoom rules apply
- Total discussion time : -10-15 mins (chair can skip playing the discussion part of the recorded video if watch party discussions are long)