

PiTP 2025

“Gravitational Waves from Theory to Observation”

All lectures in Wolfensohn Hall unless noted otherwise

Week #1 - July 14 – 18

(Updated: 6/25/25)

Time:	Monday, July 14th	Tuesday, July 15th	Wednesday, July 16th	Thursday, July 17th	Friday, July 18th
8:30 – 9:30 am	Breakfast (Simons Hall)	Breakfast (Simons Hall)	Breakfast (Simons Hall)	Breakfast (Simons Hall)	Breakfast (Simons Hall)
	Registration (Wolfensohn Hall)				
9:15 – 9:30 am	Welcome and Introduction				
9:30 – 10:45 am	“GW overview of basic theory and sources” Zaldarriaga	“GW - detection - theory” Zackay	“Parameter inference of gravitational wave sources II” Nerella	“GW - detection - in practice” Zackay	“Approaches to waveform modelling” Schmidt
10:45 – 11:30 am	Coffee Break (Rubenstein Commons)	Coffee Break (Rubenstein Commons)	Coffee Break (Rubenstein Commons)	Coffee Break (Rubenstein Commons)	Coffee Break (Rubenstein Commons)
11:30 am – 12:45 pm	“The stochastic GW background and PTAs” Allen	“The stochastic GW background and PTAs” Allen	“The stochastic GW background and PTAs” Allen	“The stochastic GW background and PTAs” Allen	“GW - detection – signal consistency tests” Zackay
1:00 – 2:00 pm	Lunch (Simons Hall)	Lunch (Simons Hall)	Lunch (Simons Hall)	Lunch (Simons Hall)	Lunch (Simons Hall)
2:00 - 3:15 pm	“Approaches to waveform modelling” Schmidt	“GW overview of basic theory and sources” Zaldarriaga	“GW overview of basic theory and sources” Zaldarriaga	“Approaches to waveform modelling” Schmidt	“Hands on exercises with gravitational wave parameter inference” Nerella
3:15 – 4:00 pm	Afternoon Tea (Rubenstein Commons)	Afternoon Tea (Rubenstein Commons)	Afternoon Tea (Rubenstein Commons)	Afternoon Tea (Rubenstein Commons)	Afternoon Tea (Rubenstein Commons)
4:00 – 5:15 pm	“Parameter inference of gravitational wave sources I” Nerella	Poster Session 1 (Rubenstein Commons Meeting Room 5)	Hands-On Sessions	Hands-On Sessions	Hands-On Sessions
5:30 – 7:00pm	Welcome Dinner (Simons Hall)	Dinner (Simons Hall)	Dinner (Simons Hall)	Dinner (Simons Hall)	Dinner (Simons Hall)

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Week #2 - July 21-25

Time:	Monday, July 21st	Tuesday, July 22nd	Wednesday, July 23rd	Thursday, July 24th	Friday, July 25th
8:30 – 9:30 am	Breakfast (Simons Hall)	Breakfast (Simons Hall)	Breakfast (Simons Hall)	Breakfast (Simons Hall)	Breakfast (Simons Hall)
9:30 – 10:45 am	“Introduction to low-frequency GW astronomy (overview)” Mingarelli	“Numerical relativity, assessing the non-linear regime of gravity and the merger of compact objects in particular” Lehner	“The LISA Global Fit - or how to listen to 10,000 conversations at the same time” Cornish	“The Gravitational Wave Signatures of Core-Collapse Supernova Explosions” Burrows	“Astrophysical Implications of Gravitational Waves from the Stellar Graveyard” Fishbach
10:45 – 11:30 am	Coffee Break (Rubenstein Commons)	Coffee Break (Rubenstein Commons)	Coffee Break (Rubenstein Commons)	Coffee Break (Rubenstein Commons)	Coffee Break (Rubenstein Commons)
11:30 am – 12:45 pm	“Connecting Electro-magnetic and gravitational-wave probes of supermassive black hole demographics” Greene	“Gravitational wave detection in space - the LISA mission” Cornish	“Overlap reduction functions: derivation of the Hellings and Downs curve, and beyond” Mingarelli	“Astrophysical Implications of Gravitational Waves from the Stellar Graveyard” Fishbach	“Numerical relativity, assessing the non-linear regime of gravity and the merger of compact objects in particular” Lehner
1:00 – 2:00 pm	Lunch (Simons Hall)	Lunch (Simons Hall)	Lunch (Simons Hall)	Lunch (Simons Hall)	Lunch (Simons Hall)
2:00 - 3:15 pm	“Gravitational Wave Parameter Estimation” Cornish	“Astrophysical Implications of Gravitational Waves from the Stellar Graveyard” Fishbach	“Numerical relativity, assessing the non-linear regime of gravity and the merger of compact objects in particular” Lehner	“The characteristic strain: gravitational wave astrophysics from the cosmic merger history of supermassive black holes” Mingarelli	End of Program
3:15 – 4:00 pm	Afternoon Tea (Rubenstein Commons)	Afternoon Tea (Rubenstein Commons)	Afternoon Tea (Rubenstein Commons)	Afternoon Tea (Rubenstein Commons)	
4:00 – 5:15 pm	Hands-On Sessions	Poster Session 2 (Rubenstein Commons Meeting Room 5)	Hands-On Sessions	Hands-On Sessions	
5:30 – 7:00pm	Dinner (Simons Hall)	Dinner (Simons Hall)	Pool/Pizza Party (97 Olden Lane) (5:30 – 8:30 pm)	Dinner (Simons Hall)	