



**The Architecture of LISA Science Analysis:
Imagining the Future**

**January 16-19, 2018
Overview Schedule**

**Tuesday, January 16 - Hameetman Auditorium
Cahill Building - Caltech**

**Short Course: Science, Source Modeling, and Data Analysis for the Space-Based Gravitational-Wave Observatory LISA
Introductory Lectures - Open to all interested students, researchers and faculty**

Time	Event	Speaker
8:15 - 8:45	Coffee and Refreshments	
8:45 - 9:00	Logistics / Introduction	Michele Judd Team Lead
9:00 - 10:00	An Overview of Lisa Science	Curt Cutler
10:00 - 11:00	Analytical and Numerical Modeling of Binary Sources: State of the Art and Prospects	Deirdre Shoemaker
11:00 - 11:30	Break	
11:30 - 12:30	Introduction to Data Analysis of Gravitational-Wave Signals	Stanislav (Stas) Babak
12:30 - 1:30	Short Course Ends: Informal Lunch is provided outside on the Cahill Patio	

**Invitation-Only Workshop Begins
Keck Center - Think Tank, Room 155**

1:30 - 1:45	Walk to Keck Center, pick up badge and welcome packet, find seat in the Think Tank	
1:45 - 2:30	Workshop Logistics and Introduction to KISS	Michele Judd
2:30 - 3:00	Participant Introductions	Michele Judd
3:00 - 3:30	Study Vision and Goals	Team Leads
3:30 - 4:00	Break	
4:00 - 5:00	Finalize Study Vision, Goals, and Report Writing via Plenary Discussion	Team Leads
5:00 - 5:30	Discussion of Planned and Additional Short Talks	Team Leads
5:30 - 6:00	Pack Up and Walk to the Athenaeum	All
6:00	Dinner at the Athenaeum	

Wednesday, January 17 - Keck Center - Think Tank, Room 155

Time	Event	Speaker
8:00 - 8:30	Institute Opens - FREE THINK TIME	
8:30 - 9:00	Coffee and Refreshments at Keck Center	
9:00 - 9:15	Logistics and Team Lead Goals for the Day	Michele Judd and Team Leads
9:15 - 9:45	Stochastic Methods in LISA Searches (25' + 5')	Neil Cornish
9:45 - 10:15	Astronomical Applications of Machine Learning and Neural Networks (25' + 5')	Ashish Mahabal
10:15 - 10:30	Group Discussion	All
10:30 - 11:00	Break	
11:00 - 11:40	Short Talks: Architecture of Data Archives (3, 15' + 5')	Stas Babak, Rachel Akeson
11:40 - 12:30	Group Discussion	All
12:30 - 2:00	Group Picture and Lunch at the Athenaeum	
2:00 - 2:15	Charge of Breakout Groups: Organizing LISA Science Pipelines, Imagining LISA Data Archives, TBD	All
2:15 - 3:30	Breakout Groups Meet	Groups
3:30 - 4:00	Break	
4:00 - 4:30	Reports from Breakout Groups (10-15 minutes each)	Groups, All
4:30 - 5:30	Panel on Social Aspects of Coding in Scientific Organizations	Christine Corbett-Moran, Alberto Vecchio
6:00	OPTIONAL: Dinner on your own, or team leads may organize a no-host dinner in Pasadena for interested parties	

Thursday, January 18 - Keck Center - Think Tank, Room 155

8:00 - 8:30	Institute Opens - FREE THINK TIME	
8:30 - 9:00	Coffee and Refreshments at Keck Center	
9:00 - 9:15	Logistics and Team Lead Goals for the Day	Michele Judd and Team Leads
9:15 - 9:45	New Paradigms for Computational Astrophysics (25' + 5')	Larry Kidder
9:45 - 10:15	Waveform Modeling for Parameter Estimation (25' + 5')	Prayush Kumar
10:15 - 10:30	Group Discussion	All
10:30 - 11:00	Break	
11:00 - 11:40	Short Talks: Source Modeling (2, 15' + 5')	Chad Galley, Francois Foucart
11:40 - 12:30	Panel on EMRI Modeling	Curt Cutler, Stas Babak, Alvin Chua
12:30 - 2:00	Lunch on your own	
2:00 - 2:15	Charge of Breakout Groups: LISA-Targeted Waveform Modeling vs Science Investigations; Promising Optimizations; Interplay with Parameter Estimation	All
2:15 - 3:30	Breakout Groups Meet	Groups
3:30 - 4:00	Break	
4:00 - 4:30	Report from Breakout Groups (10-15 mins each)	Groups
4:30 - 5:10	Short Talks: "Live" Data Products and Scientific Enlightenment (2, 15' + 5')	Titus Brown, Scott Davidoff
5:10 - 5:30	Group Discussion	All
5:30 - 6:00	Pack Up and Walk to Athenaeum	All
6:00	Dinner at the Athenaeum (with spouses and significant others)	

Friday, January 19 - Keck Center - Think Tank, Room 155

Time	Event	Speaker
8:00 - 8:30	Institute Opens - FREE THINK TIME	
8:30 - 9:00	Coffee and Refreshments at Keck Center	
9:00 - 9:15	Logistics and Team Lead Goals for the Day	Michele Judd and Team Leads
9:15 - 10:05	Short Talks: Data-Intensive Computational Architectures and GPUs (2, 15' + 5')	Dan Crichton, Kate Clark
10:05 - 10:30	Group Discussion	All
10:30 - 11:00	Final Study Activities and Assignments - Group Discussion	
11:00 - 12:30	Summarize Findings, Group Discussion on Recommendations	Team Leads, All
12:30 - 2:00	Lunch at the Athenaeum	
2:00 - 3:30	Breakout Groups for Report Writing (Waveforms, Data Analysis, Techniques, Hardware)	All
3:30 - 4:00	Break	
4:00 - 4:45	Final Study Activities and Assignments - Group Discussion	All
4:45 - 5:00	Workshop Closeout	Michele Judd
5:00	Workshop Concludes	