



Optical Frequency Combs for Space Applications

November 2-5, 2015
Overview Schedule

Monday, November 2, 2015 - Beckman Institute Auditorium - Caltech

Short Course: Optical Frequency Combs - Principles of Operation and Applications Introductory Lectures - Open to all interested students, researchers and faculty

Time	Event	Speaker
7:30 - 8:00	Coffee and Refreshments	
8:00 - 8:15	Logistics / Introduction	Michele Judd Team Lead
8:15 - 9:25	Optical Frequency Combs Part I - Fundamentals of Frequency Combs: What They Are and How They Work	Scott Diddams
9:25 - 9:55	Break	
9:55 - 11:05	Applications of Frequency Combs	Nathan Newbury
11:05 - 11:50	Space Flight Considerations for Precision Optical Instrumentation 1	Carl Weimer
11:50 - 12:30	Space Flight Considerations for Precision Optical Instrumentation 2	Mike Shao
12:30 - 1:30	Short Course Ends: Informal Lunch is provided on the Beckman Institute 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	
1:45-2:45	Workshop Logistics and Introduction to KISS	Michele Judd
2:45 - 3:00	Participant Introductions	Michele Judd
3:00 - 3:30	Break	
3:30 - 4:30	Workshop Objectives and Goals and Lightening Talks, Solicitation of Mission Seed Ideas	Team Leads
4:30 - 5:00	Frequency Comb Mission Seed Idea 1 - Planet Formation Imager - Mid-IR Frequency Combs for Heterodyne Detection	Gautam Vasisht
5:00 - 5:30	Frequency Comb Mission Seed Idea 2 - Atmospheric Gas Detection for Climate Change Studies	Christian Frankenberg
5:30 - 6:00	Frequency Comb Mission Seed Idea 3	Open - All
6:30	Dinner at the Athenaeum	

Tuesday, November 3, 2015 - Keck Center - Think Tank, Room 155

Special Topics in Optical Frequency Combs - Short Talks

Time	Event	Speaker
8:00 - 8:30	Registration, Coffee and Refreshments at Keck Center	
8:30 - 8:45	Logistics	Michele Judd
8:45 - 9:00	Workshop Objectives and Goals - Introduction of Special Topics Areas	Team Leads
9:00 - 9:25	Special Topic Short Talk	Tobias Kippenberg
9:25 - 9:50	Special Topic Short Talk	Debra Fischer
9:50 - 10:15	Special Topic Short Talk	Alex Gaeta
10:15 - 10:45	Break	
10:45 - 11:10	Remote Sensing/In Situ Space Applications of TeraHertz (THz) Frequency Combs	Geoff Blake
11:10 - 11:35	Self-Referencing Electro-Optic Frequency Combs	Scott Papp
11:35-12:00	Towards Direct Generation of Wide Coherent Microcombs with Photonic Belt Resonators	Ivan Grudinin
12:00 - 12:30	Group picture, walk to the Athenaeum	
12:30 - 2:00	Lunch at the Athenaeum	
2:00 - 2:25	Kerr Frequency Combs: Pathways from Laboratory to Space Borne Devices	Lute Maleki
2:25 - 3:30	Selection of Breakout Groups and Topics, Breakout Groups Meet	Team Leads, All
3:30 - 4:00	Break	
4:00 - 5:00	Breakout Groups Meet	
5:00 - 5:30	Groups reconvene - Open discussion	
5:30 - 7:30	Informal food truck dinner at the Keck Center (dinner starts at 6:30 pm) & Poster Session	

Wednesday, November 4, 2015 - Keck Center - Think Tank, Room 155**Special Topics in Optical Frequency Combs - Short Talks**

8:00 - 8:30	Coffee and Refreshments	
8:30 - 8:45	Logistics	Michele Judd
8:45 - 9:00	Progress Update: Goals for Day 3	Team Leads
9:00 - 9:25	Special Topic Short Talk	Ronald Holzwarth
9:25 - 9:50	Space-Based Gravitational Wave Interferometry with Optical Frequency Comb	Massimo Tinto
9:50-10:20	Break	
10:20 - 10:45	A Space Based Timing Infrastructure using Frequency Combs	John Burke
10:45 - 11:10	Clocks and Fundamental Tests in Space	Nan Yu
11:10 - 11:30	Group discussion	All
11:30 - 1:30	Lunch on your own	
1:30 - 4:00	Breakout Groups Meet	
4:00 - 4:30	Groups reconvene - Open discussion	All
4:30 - 5:00	Walk to Lees-Kubota Lecture Hall, Guggenheim Laboratory and break	
5:00 - 6:00	Lecture by John Hall at Lees-Kubota Lecture Hall, Guggenheim Laboratory, "Light, Atomic Clocks, and Einstein's Relativity"	
6:15	Dinner at the Athenaeum (with spouses and significant others)	

Thursday, November 5, 2015 - Keck Center - Think Tank, Room 155

Time	Event	Speaker
8:00 - 8:30	Coffee and Refreshments	
8:30 - 8:45	Logistics	Michele Judd
8:45 - 9:00	Progress Update: Goals for Day 4 (what success looks like at the end of this workshop)	Team Leads
9:00 - 10:30	Breakout Groups - Final Session	All
10:30 - 11:00	Break	
11:00-12:00	Working Group Writing Session	All
12:00 - 1:30	Lunch at the Athenaeum	
1:30 - 3:30	Open Discussion of Breakout Group Recommendations and Group Feedback	All
3:30 - 4:00	Break	
4:00 - 4:40	Interim study activities and assignments - Group Discussion	All
4:40 - 5:00	Workshop Closeout	Michele Judd
5:00	Workshop Concludes	