

15 minute presentation = 10 minute talk + 5 minute discussion

20 minute presentation = 15 minute talk + 5 minute discussion

Monday 23 June

Data sets. (Chair: Robert Ferdman)

09:00: Welcome/Announcements from LOC/SOC (R. Ferdman/D. Nice, 10 min)

09:10: Welcome from IPTA Steering Committee Chair (S. Ransom, 10 min)

09:20: Introduction/overview (A. Lommen, 20 min)

09:40: [IPTA Project] Combined data release (L. Lentati, 20 min)

10:00: PPTA data release 2 (M. Kerr, 20 min)

10:20: EPTA data (N. Caballero, 20 min)

10:40-11:10 break

Data sets, continued. (Chair: Delphine Perrodin)

11:10: New NANOGrav data sets (P. Demorest, 20 min)

11:30: Combining data from different telescopes (I. Stairs, 15min)

11:45: New PPTA pulsar parameters (D. Reardon, 15 min)

12:00: Data provenance (G. Hobbs, 15 min)

12:15: **Follow-up discussion (15 min)**

12:30-15:00 break (lunch)

Gravitational wave backgrounds. (Chair: Sotirios Sanidas)

15:00: [IPTA Project] Searching for an isotropic stochastic background of GWs (R. van Haasteren, 20 min)

15:20: [IPTA Project] IPTA/EPTA effort to constrain anisotropy in the GW background (S. Taylor/C. Mingarelli, 20 min)

15:40: Re-examining assumptions made in stochastic GW background searches (C. Mingarelli, 20 min)

16:00: Mapping the GW background using PTAs (J. Gair, 15 min)

16:15: **Poster presentations (1 minute per poster)**

16:30-17:00 break

Gravitational wave backgrounds, continued (Chair: Xavi Siemens)

17:00: Possibility of false detections in gravitational wave searches (C. Tiburzi, 15 min)

17:15: Building confidence in a PTA detection (N. Cornish, 20 min)

17:35: **Follow-up discussion (25 min)**

18:00: End

World Cup:

10:00: Netherlands v Chile, Australia v Spain

14:00: Croatia v Mexico, Cameroon v Brazil

Tuesday 24 June

Gravitational waves: Sources and implications. (Chair: Alberto Vecchio)

09:00 Comparing predictions and measurements of the GW stochastic background (S. McWilliams, 20 min)

09:20 Gravitational waves signal prediction (V. Ravi, 20 min)

09:40 Searching for dual AGN and binary supermassive black holes: PTA progenitor population (J. Lazio, 20 min)

10:00 Single source or stochastic background? A theoretical perspective (A. Sesana, 20 min)

10:20-10:50 break

Continuous gravitational wave sources. (Chair: Linqing Wen)

10:50: [IPTA Project] Continuous wave search (J. Ellis, 20 min)

11:10: Continuous wave searching (Y. Wang, 15 min)

11:25: Continuous wave search in the PPTA data (X. Zhu, 15 min)

11:40: EPTA results on continuous wave sources (P. Brem, 15 min)

11:55: **Follow-up discussion (35 min)**

12:30-15:00 break (lunch)

14:00-14:50 (during break) Break-out session: Future of Arecibo for pulsar work (F. Camilo)

Pulsar surveys. (Chair: Xingjiang Zhu)

15:00: Searches for MSPs: Overview and predictions (M. McLaughlin, 20 min)

15:20: GMRT High Resolution Southern Sky (GHRSS) survey for MSPs: a SKA precursor (B. Bhattacharyya, 15 min)

15:35: Accelerating binary pulsar search with GPU and FPGA (Jintao Luo, 15 min)

15:50: Current survey sensitivity to MSPs (J. Swiggum, 15 min)

16:05: Pulsar image-based classification system: a pattern recognition AI for searching pulsars (W. Zhu, 15 min)

16:20: **Follow-up discussion (10 min)**

16:30-17:00 break

Detection protocol. (Chair: Scott Ransom)

17:00: **Discussion: Discovery protocol (S. Ransom, 60 min)**

18:00: End

Evening public events.

17:00: Ask an astronomer event, Maclab Bistro

19:00: Public Talk, Max Bell Auditorium, Max Bell Building (V. Kaspi).

World Cup:

10:00: Italy v. Uruguay, Costa Rica v England

14:00: Japan v Columbia, Greece v. Ivory Coast

Wednesday 25 June

The ISM. (Chair: Dustin Madison)

09:00: Why we need to understand the ISM (W. Coles, 20 min)

09:20: Correcting for intertwined propagation delays (D. Stinebring, 20 min)

09:40: Estimates of scattering effects from the NANOGrav data sets (L. Levin, 15 min)

09:55: Correcting for Interstellar Scattering Delay in High-precision Pulsar Timing (N.Palliyaguru, 15 min)

10:10: Contributions of LOFAR to pulsar timing (J. Hessels, 15 min)

10:25-10:55 break

Timing software and algorithm development. (Chair: Ingrid Stairs)

10:55: Frequency-dependent polarisation for millisecond pulsars and profile fitting (S. Dai, 15 min)

11:10: Application of wideband timing to PTA pulsars (T. Pennucci, 15 min)

11:25: PINT timing package (Jing Luo, 15 min)

Non-gravitational-wave projects using PTA multi-pulsar data.

11:40 Timing and astrometry of MSPs with arrays (J. Roy, 15 min)

11:55 [IPTA Project] Pulsar time scale IPTA project (G. Hobbs, 15 min)

12:10 [IPTA Project] IPTA solar system project (P. Lazarus, 15 min)

12:25-15:00 break (lunch)

Noise budgets and sources of noise. (Chair: Lina Levin)

15:00: Pulsar Timing Noise Budget (J. Cordes, 20 min)

15:20: [IPTA Project] J1713+0747 global campaign (T. Dolch, 20 min)

15:40: Noise budget (M. Lam, 15 min)

15:55: Jitter and spin noise in PPTA Pulsars (R. Shannon, 15 min)

16:10: Noise characteristics of MSPs in EPTA data (N. Caballero, 15 min)

16:25-16:55 break

Discussion session. (Chair: Rutger van Haasteren)

16:55: **Follow-up discussion / lightning talks as warranted (65 min)**

18:00: End

World Cup:

10:00: Nigeria v Argentina, Bosnia-Herzegovina v Iran

14:00: Ecuador v France, Honduras v Switzerland

Thursday 26 June

Instrumentation. (Chair: Gemma Janssen)

09:00: LEAP (C. Bassa, 15 min)

09:15: Timing MSPs with CHIME (V. Kaspi, 15 min)

09:30: MeerKAT (S. Buchner, 15 min)

09:45: Massive scale pulsar observations with the Molonglo telescope (F. Jankowski, 15 min)

10:00: Parkes instrumentation (R. Manchester, 15 min)

10:15: Wideband receivers for DSN antennas (J. Lazio, 15 min)

10:30-11:00 break

Instrumentation, continued. (Chair: Vicky Kaspi)

11:00: Implementation of the LEAP project at the Sardinia Radio Telescope (D. Perrodin)

11:15: ARTS: The Apertif Radio Transient System (J. van Leeuwen, 15 min)

11:30: SKA and pulsar timing arrays (M. Kramer, 15 min)

11:45: **Follow-up discussion: morning session (15 min)**12:00: **Discussion: Outreach (R. Lynch/ C. Mingarelli, 30 min)**

12:30-15:00 break (lunch)

Bursts with memory. (Chair: Vikram Ravi)

15:00: PPTA constraints on GW bursts with memory (J. Wang, 15 min)

15:15: NANOGrav constraints on GW bursts with memory (D. Madison, 15 min)

15:30: Towards a gravitational wave burst pipeline (B. Christy, 15 min)

15:45-15:55 short break

Discussion and closing. (Chair: Patrick Lazarus)15:55: **Follow-up discussion / lightning talks as warranted (60 min)**

16:55: Closing remarks (R. Manchester, 20 min)

17:15: End

Evening.**Conference dinner: The Maple Leaf Restaurant.**

Restaurant opens for us at 18:30.

World Cup :

10:00: United States v Germany, Portugal v Ghana

14:00: South Korea v Belgium, Algeria v Russia

Friday 27 June

Detection workshop. Schedule published separately.