

Program LASCON 2020

Date: Time: Activity: Coordinator(s):

Sun Jan 5 14:00–22:00 Arrival day A. Roque

Mon Jan 6 09:00–10:00 Lecture 1. Introduction to LASCON and computational neuroscience A. Roque

10:00–10:20 Coffee break

10:20–11:20 Lecture 2. The cable equation A. Roth

11:20–11:30 Interval

11:30–12:30 Lecture 3. The Hodgkin-Huxley model A. Roth

12:30–14:30 Lunch

14:30–15:30 Tutorial 1. PYTHON tutorial N. Kamiji, C. Romaro and R. Shimoura

15:30–15:40 Interval

15:40–16:40 Tutorial 2. Introduction to NEURON A. Roth, N. Kamiji and C. Romaro

16:40–17:00 Coffee break

	17:00–18:00	Tutorial 3. NEURON 1	A. Roth, N. Kamiji and C. Romaro
	18:00–20:00	Software installation and exercises	Tutors
Tue Jan 7	09:00–10:00	Lecture 4. Matching passive neuron models to data	A. Roth
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 5. Modeling ionic currents and their effects	A. Roth
	11:20–11:30	Interval	
	11:30–12:30	Lecture 6. Reduced and simplified neuron models and phase plane analysis 1	H. Rotstein
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 4. NEURON 2	A. Roth, N. Kamiji and C. Romaro
	15:30–15:40	Interval	
	15:40–16:40	Tutorial 5. NEURON 3	A. Roth, N. Kamiji and C. Romaro
	16:40–17:00	Coffee break	

	17:00–18:00	Tutorial 6. Reduced and simplified neuron models and phase plane analysis tutorial 1	H. Rotstein and M. Girardi-Schappo
	18:00–20:00	Exercises	Tutors
Wed Jan 8	09:00–10:00	Lecture 7. Modeling synapses	A. Roth
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 8. Compartmental modeling	A. Roth
	11:20–11:30	Interval	
	11:30–12:30	Lecture 9. Reduced and simplified neuron models and phase plane analysis 2	H. Rotstein
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 7. NEURON 4	A. Roth, N. Kamiji and C. Romaro
	15:30–15:40	Interval	
	15:40–16:40	Tutorial 8. NEURON 5	A. Roth, N. Kamiji and C. Romaro
	16:40–17:00	Coffee break	

	17:00–18:00	Tutorial 9. Reduced and simplified neuron models and phase plane analysis tutorial 2	H. Rotstein and M. Girardi-Schappo
	18:00–20:00	Exercises	Tutors
Thu Jan 9	09:00–10:00	Lecture 10. Dendritic computation	A. Roth
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 11. Realistic modeling of small neuron circuits	A. Roth
	11:20–11:30	Interval	
	11:30–12:30	Lecture 12. Reduced and simplified neuron models and phase plane analysis 3	H. Rotstein
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 10. NEURON 6	A. Roth, N. Kamiji and C. Romaro
	15:30–15:40	Interval	
	15:40–16:40	Lecture 13. Resources for neural modeling	A. Roth
	16:40–17:00	Coffee break	

	17:00–18:00	Tutorial 11. Reduced and simplified neuron models and phase plane analysis tutorial 3	H. Rotstein and M. Girardi-Schappo
	19:30–22:30	Get together party 1	A. Roque
Fri Jan 10	09:00–10:00	Lecture 14. Reduced and simplified neuron models and phase plane analysis 4	H. Rotstein
	10:00–10:20	Coffee break	
	10:20–11:20	Invited Lecture 1. To be announced	A. Roth
	11:20–11:30	Interval	
	11:30–12:30	Lecture 15. Stochastic models in neuroscience 1	A. Duarte
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 12. Reduced and simplified neuron models and phase plane analysis tutorial 4	H. Rotstein and M. Girardi-Schappo
	15:30–15:40	Interval	
	15:40–16:40	Tutorial 13. Stochastic models in neuroscience	A. Duarte, N. Kamiji, R. Shimoura and V. Lima
	16:40–17:00	Coffee break	

	17:00–18:00	Exercises	Tutors
	18:00–20:00	Exercises	Tutors
Sat Jan 11	09:00–10:00		
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 16. Networks of simplified neuron models 1	S. van Albada
	11:20–11:30	Interval	
	11:30–12:30	Tutorial 14. NEST 1	S. van Albada and R. Shimoura
	12:30–14:30	Lunch	
	14:30–15:30	Lecture 17. Networks of biophysical neuron models 1	W. Lytton
	15:30–15:40	Interval	
	15:40–16:40	Tutorial 15. Networks of biophysical neuron models tutorial 1	W. Lytton, S. Dura-Bernal, C. Romaro and N. Kamiji
Sun Jan 12		Day off	
Mon Jan 13	09:00–10:00	Lecture 18. Networks of biophysical neuron models 2	W. Lytton

	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 19. Networks of simplified neuron models 2	S. van Albada
	11:20–11:30	Interval	
	11:30–12:30	Lecture 20. Stochastic models in neuroscience 2	A. Duarte
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 16. Networks of biophysical neuron models tutorial 2	W. Lytton, S. Dura-Bernal, C. Romaro and N. Kamiji
	15:30–15:40	Interval	
	15:40–16:40	Tutorial 17. NEST 2	S. van Albada and R. Shimoura
	16:40–17:00	Coffee break	
	17:00–18:00	Invited lecture 2: to be announced	H. Rotstein
	18:00–20:00	Exercises	Tutors
Tue Jan 14	09:00–10:00	Lecture 21. Networks of biophysical neuron models 3	W. Lytton
	10:00–10:20	Coffee break	

	10:20–11:20	Lecture 22. Networks of simplified neuron models 3	S. van Albada
	11:20–11:30	Interval	
	11:30–12:30	Lecture 23. Synaptic plasticity and learning 1	G. Mato
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 18. Networks of biophysical neuron models tutorial 3	W. Lytton, S. Dura-Bernal, C. Romaro and N. Kamiji
	15:30–15:40	Interval	
	15:40–16:40	Tutorial 19. NEST 3	S. van Albada and R. Shimoura
	16:40–17:00	Coffee break	
	17:00–18:00	Tutorial 20: Synaptic plasticity and learning tutorial 1	G. Mato and M. Girardi-Schappo
	18:00–20:00	Exercises	Tutors
Wed Jan 15	09:00–10:00	Lecture 24. Networks of biophysical neuron models 4	W. Lytton
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 25. Networks of simplified neuron models 4	S. van Albada

	11:20–11:30	Interval	
	11:30–12:30	Tutorial 21. Networks of biophysical neuron models tutorial 4	W. Lytton, S. Dura-Bernal, C. Romaro and N. Kamiji
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 22. NEST 4	S. van Albada and R. Shimoura
	15:30–15:40	Interval	
	15:40–16:40	Interviews with students for projects definitions	A. Roque, lecturers and tutors
	16:40–17:00	Coffee break	
	17:00–20:00	Interviews with students for projects definitions	A. Roque, lecturers and tutors
Thu Jan 16	09:00–10:00	Lecture 26. Synaptic plasticity and learning 2	G. Mato
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 27. Spike train analysis 1	C. Pouzat
	11:20–11:30	Interval	
	11:30–12:30	Invited Lecture 3. To be announced	W. Lytton

	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 23. Synaptic plasticity and learning tutorial 2	G. Mato and M. Girardi-Schappo
	15:30–15:40	Interval	
	15:40–16:40	Tutorial 24. Spike train analysis tutorial 1	C. Pouzat
	16:40–17:00	Coffee break	
	17:00–18:00	Invited lecture 4. To be announced	S. van Albada
	19:30–22:30	Get together party 2	A. Roque
Fri Jan 17	09:00–10:00	Lecture 28. Synaptic plasticity and learning 3	G. Mato
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 29. Spike train analysis 2	C. Pouzat
	11:20–11:30	Interval	
	11:30–12:30	Invited lecture 5. To be announced	A. Duarte
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 25. Synaptic plasticity and learning tutorial 3	G. Mato and M. Girardi-Schappo

	15:30–15:40	Interval	
	15:40–16:40	Tutorial 26. Spike train analysis tutorial 2	C. Pouzat
	16:40–17:00	Coffee break	
	17:00–18:00	Invited lecture 6. To be announced	G. Mato
	18:00–18:10	Interval	
	18:10–19:10	Invited lecture 7. To be announced	M. Girardi-Schappo
	19:10–20:00	Exercises	Tutors
Sat Jan 18	09:00–10:00	Lecture 30. Synaptic plasticity and learning 4	G. Mato
	10:00–10:20	Coffee break	
	10:20–11:20	Invited Lecture 8. To be announced	S. Dura-Bernal
	11:20–11:30	Interval	
	11:30–12:30	Tutorial 27. Synaptic plasticity and learning tutorial 4	G. Mato and M. Girardi-Schappo
	12:30–	Rest of day free	
Sun Jan 19		Day off	

Mon Jan 20	09:00–10:00	Lecture 31. Spike train analysis 3	C. Pouzat
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 32. Computational modeling of local field potentials 1	G. Einevoll
	11:20–11:30	Interval	
	11:30–12:30	Lecture 33. Time and space in the brain 1	E. Kropff
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 28. Spike train analysis tutorial 3	C. Pouzat
	15:30–15:40	Interval	
	15:40–16:40	Tutorial 29. Computational modeling of local field potentials tutorial 1	G. Einevoll
	16:40–17:00	Coffee break	
	17:00–18:00	Invited lecture 9. To be announced	R. Shimoura
	18:00–20:00	Exercises and project work	Tutors
Tue Jan 21	09:00–10:00	Lecture 34. Spike train analysis 4	C. Pouzat

	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 35. Computational modeling of local field potentials 2	G. Einevoll
	11:20–11:30	Interval	
	11:30–12:30	Lecture 36. Time and space in the brain 2	E. Kropff
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 29. Spike train analysis tutorial 4	C. Pouzat
	15:30–15:40	Interval	
	15:40–16:40	Tutorial 30. Computational modeling of local field potentials tutorial 2	G. Einevoll
	16:40–17:00	Coffee break	
	17:00–18:00	Invited lecture 10. To be announced	M. Reyes
	18:00–20:00	Exercises and project work	Tutors
Wed Jan 22	09:00–10:00	Lecture 37. Computational modeling of local field potentials 2	G. Einevoll
	10:00–10:20	Coffee break	

	10:20–11:20	Lecture 38. Brain stimulation: principles and challenges 1	R. Ilmoniemi
	11:20–11:30	Interval	
	11:30–12:30	Lecture 39. Time and space in the brain 3	E. Kropff
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 31. Computational modeling of local field potentials tutorial 3	G. Einevoll
	15:30–15:40	Interval	
	15:40–16:40	Lecture 40. Predictive coding in the retina 1	R. Cofre
	16:40–17:00	Coffee break	
	17:00–18:00	Invited lecture 11.	C. Pouzat
	18:00–20:00	Exercises and project work	Tutors
Thu Jan 23	09:00–10:00	Lecture 41. Brain stimulation: principles and challenges 2	R. Ilmoniemi
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 42. Predictive coding in the retina 2	R. Cofre
	11:20–11:30	Interval	

	11:30–12:30	Lecture 42. Brain criticality 1	M. Copelli
	12:30–14:30	Lunch	
	14:30–15:30	Invited lecture 12. To be announced	G. Einevoll
	15:30–15:40	Interval	
	15:40–16:40	Invited lecture 13. To be announced	E. Kropff
	16:40–17:00	Coffee break	
	17:00–18:00	Invited lecture 14. To be announced	C. Romaro
	19:30–22:30	Get together party 3	A. Roque
Fri Jan 24	09:00–10:00	Lecture 44. Brain stimulation: principles and challenges 3	R. Ilmoniemi
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 45. Predictive coding in the retina 3	R. Cofre
	11:20–11:30	Interval	
	11:30–12:30	Lecture 46. Brain criticality 2	M. Copelli
	12:30–14:30	Lunch	

	14:30–15:30	Invited lecture 15. To be announced	R. Ilmoniemi
	15:30–15:40	Interval	
	15:40–16:40	Lecture 47. Brain criticality 3	M. Copelli
	16:40–17:00	Coffee break	
	17:00–18:00	Invited lecture 16. To be announced	R. Cofre
	18:00–20:00	Exercises and project work	Tutors
Sat Jan 25		Public holiday in Sao Paulo (day off)	
Sun Jan 26		Day off	
Mon Jan 27	09:00–10:00	Lecture 48. Computational psychiatry 1	J. Murray
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 49. Connectome to behavior: lessons so far and challenges ahead 1	E. Shlizerman
	11:20–11:30	Interval	
	11:30–12:30	Invited lecture 17. To be announced	M. Copelli

	12:30–14:30	Lunch	
	14:30–15:30	Lecture 50. Connectome to behavior: lessons so far and challenges ahead 2	E. Shlizerman
	15:30–15:40	Interval	
	15:40–16:40	Student projects progress report session	A. Roque, lecturers and tutors
	16:40–17:00	Coffee break	
	17:00–18:00	Student projects progress report session	A. Roque, lecturers and tutors
	18:00–20:00	Exercises and project work	Tutors
Tue Jan 28	09:00–10:00	Lecture 51. Computational psychiatry 2	J. Murray
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 52. Connectome to behavior: lessons so far and challenges ahead 3	E. Shlizerman
	11:20–11:30	Interval	
	11:30–12:30	Lecture 53. Dynamics of functional connectivity 1	D. Battaglia
	12:30–14:30	Lunch	

	14:30–15:30	Invited lecture 18. To be announced	E. Shlizerman
	15:30–15:40	Interval	
	15:40–16:40	Lecture 54. Dynamics of functional connectivity 2	D. Battaglia
	16:40–17:00	Coffee break	
	17:00–18:00	Tutorial 32. Dynamics of functional connectivity tutorial 1	D. Battaglia and V. Lima
	18:00–20:00	Exercises and project work	Tutors
Wed Jan 29	09:00–10:00	Lecture 55. Computational psychiatry 3	J. Murray
	10:00–10:20	Coffee break	
	10:20–11:20	Lecture 56. Dynamics of functional connectivity 3	D. Battaglia
	11:20–11:30	Interval	
	11:30–12:30	Tutorial 33. Computational psychiatry tutorial	J. Murray
	12:30–14:30	Lunch	
	14:30–15:30	Tutorial 34. Dynamics of functional connectivity tutorial 2	D. Battaglia and V. Lima
	15:30–15:40	Interval	

	15:40–16:40	Exercises and project work	Tutors
	16:40–17:00	Coffee break	
	17:00–20:00	Exercises and project work	Tutors
Thu Jan 30	09:00–10:00	Invited Lecture 19. To be announced	J. Murray
	10:00–10:20	Coffee break	
	10:20–11:20	Invited Lecture 20. To be announced	D. Battaglia
	11:20–11:30	Interval	
	11:30–12:30	Invited Lecture 21. To be announced	A. Galves
	12:30–14:30	Lunch	
	14:30–15:30	Exercises and project work	Tutors
	15:30–15:40	Interval	
	15:40–16:40	Exercises and project work	Tutors
	16:40–17:00	Coffee break	
	17:00–20:00	Exercises and project work	Tutors
Fri Jan 31	09:40–10:00	Introduction to the project presentations	A. Roque

10:00–10:20	Coffee-break
10:20–10:40	Project presentation 1.
10:40–11:00	Project presentation 2.
11:00–11:20	Project presentation 3.
11:20–11:30	Interval
11:30–11:50	Project presentation 4.
11:50–12:10	Project presentation 5.
12:10–12:30	Project presentation 6.
12:30–14:30	Lunch
14:30–14:50	Project presentation 7.
14:50–15:10	Project presentation 8.
15:10–15:30	Project presentation 9.
15:30–15:40	Interval
15:40–16:00	Project presentation 10.
16:00–16:20	Project presentation 11.
16:20–16:40	Project presentation 12.

16:40–17:00 Coffee-break

17:00–18:30 Closing remarks A. Roque

20:00– Final party A. Roque

Sat Feb 01	09:00–	Return ho
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