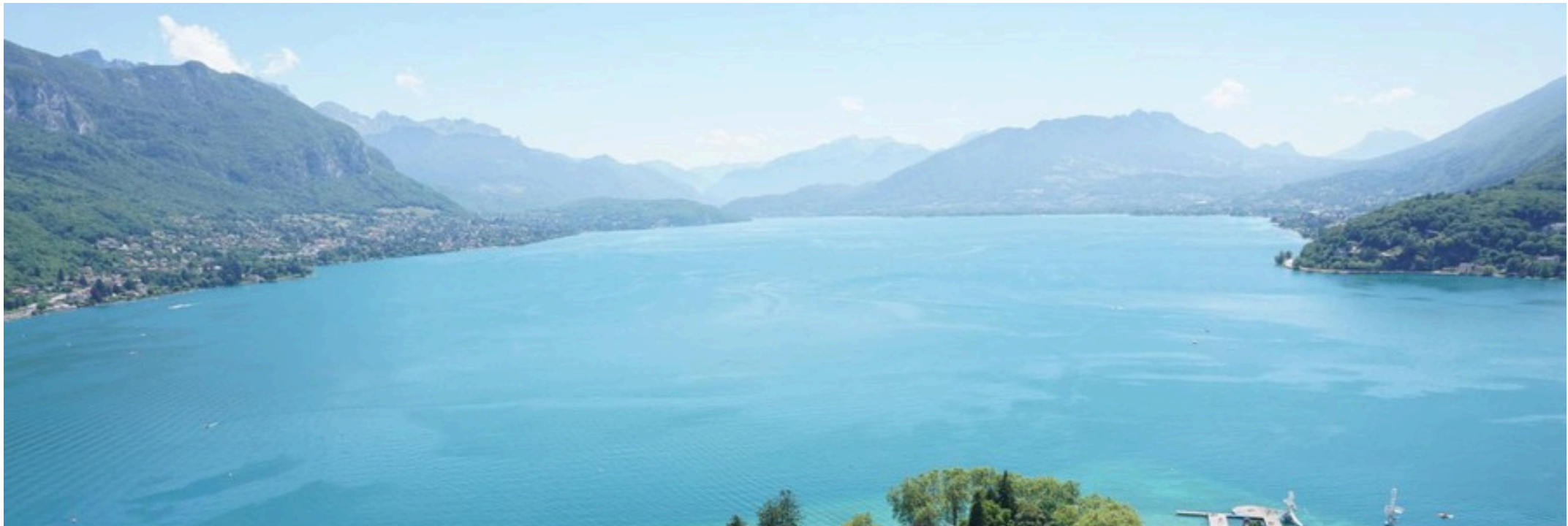


EPFL Center For Neuroprosthetics

School of Engineering & School of Life Sciences



CNP Annual Workshop 2017
23 & 24 October 2017 – Lac d'Annecy

CNP Annual Workshop 2017 –PROGRAM

DAY 1 – 23rd October

8:00	<i>BUS Geneva - Annecy</i>	<i>Departure Campus Biotech</i>
9:00	<i>Arrival & Coffee</i>	<i>Convention Center Les Pensières</i> <i>+ bag drop in luggage room</i>
9:30 – 9:45	Welcome	Prof. Olaf Blanke
9:45 – 11:30	SCIENTIFIC SESSION 1 – CNP OPPORTUNITIES	<i>Salle Charles Mérieux</i> 7 presentations of 15 min (10+5)
11:30 – 12:00	BREAK OUT SESSION – KICK OFF	4 presentations of 5 min
12:00	<i>Lunch</i>	<i>Restaurant les Pensières</i>
13:00	<i>Coffee</i> POSTER SESSION	<i>Salle Nicole Mérieux</i> <i>13:15-13:45 #even, 13:45-14:15 #odd</i>
14:30 – 16:30	BREAK OUT SESSION – PART ONE <i>Coffee available at 15:30</i>	4 groups of ~30 people in parallel workshops
16:30	<i>Free time</i> <i>BUS transfers to Imperial Palace (17:00 & 18:30)</i>	<i>Hotel Check-in</i>
19:00	<i>Apéro</i>	<i>Hotel Imperial Palace</i>
20:00	<i>Dinner</i>	<i>Salle Europe</i>
22:30	<i>Social</i>	
	<i>BUS transfers to Les Pensières (non-stop 23:00 - 2:00)</i>	<i>For people staying at Les Pensières</i>

CNP Annual Workshop 2017–PROGRAM

DAY 2 – 24th October

08:00	Breakfast	Hotel Check-out
9:00	BUS transfer to Les Pensières	For people staying at Hotel Imperial Palace + bag drop in luggage room Les Pensières
9:30 - 12:00	BREAK OUT SESSION – PART TWO Coffee available at 10:30	4 groups of ~30 people in parallel workshops
12:00	Lunch Buffet	Restaurant & Salle Nicole Mérieux + Group photo
13:30 – 14:30	BREAK OUT SESSION - WRAP-UP	Salle Charles Mérieux 4 Presentations of 15 min (10 + 5)
14:30 – 16:45	SCIENTIFIC SESSION 2 – CNP HIGHLIGHTS Coffee available at 15:30	Salle Charles Mérieux 8 presentations of 15min (10 + 5)
16:45 – 17:00	Closing remarks	All CNP Faculty
17:30	BUS Annecy - Geneva	Arrival Geneva ~18:30

CNP Annual Workshop 2017– SCIENTIFIC SESSIONS

Scientific Session 1 – 23rd October 9:45 – CNP Opportunities and new techniques

Networking possibilities with close partners and latest techniques available for research. Each presentation is 10 min + 5 min discussions.

<i>Time</i>	<i>Speaker</i>	<i>Title</i>
9:45	Friedhelm Hummel	Clinical network in the Lemnic area
10:00	Nicolas Gninenko	rt-fMRI neurofeedback
10:15	Olaf Blanke	Virtual reality
10:30	Takuya Morishita	Non-invasive brain stimulation in systems neuroscience
10:45	Quentin Barraud	Anatomical toolbox to study neural circuits in animal models
11:00	Marco Capogrosso (UNIFR)	Platform of translational neuroscience at Fribourg University: A new collaborative environment for experiments in nonhuman primates
11:15	Stéphanie Lacour	Implantable neural interfaces

Scientific Session 2 – 24th October 14:30 – CNP Highlights

Latest research at CNP and highlights. Each presentation is 10 min + 5 min discussions.

<i>Time</i>	<i>Speaker</i>	<i>Title</i>
14 :30	Giulia Preti (Van De Ville lab)	Capturing brain dynamics
14 :45	Kyuhwa Lee & Serafeim Perdikis (Millan lab)	Translational BMI for assistance and rehabilitation
15 :00	Camille Le Goff (Courtine lab)	Reversing paralysis in humans
15 :15	Marco Solcà (Blanke lab)	Immersive digital therapy and spinal cord stimulation
<i>break</i>		
15 :45	Marta Airaghi Leccardi (Ghezzi lab)	OSTE+ materials for neural technology
16 :00	Jennifer Macron (Lacour lab)	Soft penetrating electrodes
16 :15	Fiorenzo Artoni (Micera lab)	Imaging human brain activity in motion
16 :30	Philipp Koch (Hummel lab)	Structural imaging in stroke rehabilitation

CNP Annual Workshop 2017– BREAK OUT SESSIONS

Topics

Discussions during workshop sessions about new research topics and challenges at CNP:

<i>Topic</i>	<i>PIs</i>	<i>Delegates</i>	<i>Group</i>	<i>Room</i>
<i>Electroceuticals for personalized medicine</i>	Silvestro Micera Friedhelm Hummel	Giulia Preti Nicolas Vachicouras	1	Charles Mérieux (lower)
<i>Closed-loop neuro-stimulation for rehabilitation</i>	Stéphanie Lacour Grégoire Courtine	Estelle Raffin Camilla Pierella	2	Charles Mérieux (upper)
<i>Computational thinking, machine learning & health care</i>	Dimitri Van De Ville José del R. Millán	Nathan Faivre Laura Ferlauto	3	Simone Mérieux
<i>Cognitive neuroprosthetics & perceptual consciousness</i>	Olaf Blanke Diego Ghezzi	Luca Tonin Selin Anil	4	Mont-Veyrier

Two PIs and two delegates will coach four groups of 30 researchers (randomly selected).

Planning 23rd & 24th

Two sessions of approximately two hours are dedicated to team work. Each group will then present a synthesis of the work in a wrap-up session.

<i>Date & time</i>	<i>Session</i>	<i>Description</i>
23 Oct. 11:30 – 12:00	KICK-OFF	Presentation of the 4 topics (plenary session, 30min)
23 Oct. 14:30 – 16:30	PART ONE	Introduction of the problematic and team work (parallel workshops)
24 Oct. 9:30 – 12:00	PART TWO	Team work and synthesis for a presentation at the wrap-up session (parallel workshops)
24 Oct. 13:30 – 14:30	WRAP-UP	Synthesis of the 4 workshops (plenary session, 1h)

CNP Annual Workshop 2017– POSTER SESSION

#	Authors	Title (alphabetical order)
1	T. Milekovic, F. Raschella, G. Schiavone, M. Perich, Y. Jianzhong, W.K.D. Ko, Q. Li, C. Qin, M. Capogrosso, S.P. Lacour, J. Bloch, S. Micera, E. Bezar, G. Courtine	Brain-controlled neuromodulation of lumbar and sacral spinal neural circuit to alleviate gait deficits of Parkinson's disease
2	G. Stripeikyte, G. Rognini, N. Faivre, J. Potheegadoo, P. Progin, P. Hagmann, P. Conus, K. Q. Do, O. Blanke	Changes in functional connectivity within the network supporting presence hallucinations in psychosis
3	T. Morishita, J. E. Timmermann, R. Schulz, F.C. Hummel	Cost of bilateral cortical activity: Age-related effective changes of transcallosal inhibition
4	M. Badi, S. Wurth, M. Kaeser, M. Capogrosso, P. Cvcancara, T. Stieglitz, G. Kohut, J. Bloch, G. Courtine, E.M. Rouiller, S. Micera	Development of an intraneural peripheral stimulation paradigm for reversing hand paralysis in non-human primates
5	L.R. Draaisma, M.J. Wessel, F.C. Hummel	Differential effects of waveforms and current direction on intracortical inhibition and facilitation
6	E. Formento, M. Capogrosso, K. Minassian, F. Wagner, J.B. Mignardot, C.G. Le Goff, T. Milekovic, E. Bezar, J. Bloch, S. Micera* & G. Courtine*	Dimensions matter: why do the spinal cords of humans and rodents respond differently to epidural electrical stimulation
7	G. Preti and D. Van De Ville	Dynamics of functional connectivity at high spatial resolution reveal long-range interactions and fine-scale organization
8	B. Orset, I. Iturrate, R. Chavarriaga, J.d.R. Millán	EEG-based decoding of Movement Intention in a self-paced paradigm for brain-machine interface rehabilitation
9	M.J. Wessel, M. Zimerman, J.E. Timmermann, K.F. Heise, C. Gerloff, F. C. Hummel	Enhancing Consolidation of a New Temporal Motor Skill by Cerebellar Noninvasive Stimulation
10	F. Bernasconi, M. Solcà, P. Progin, K. Do, A. Guggisberg, P. Conus, M. M. Murray, G. Rogni, O. Blanke	Feeling of a presence in healthy & early psychosis
11	M. Seop Song, P. Grivaz, A. Cherpillod, A. Nesti, O. Blanke	Flight of mind - alteration of bodily self-consciousness to improve flight experience and performance
12	L. Dejace, H. O. Michaud, A. Hirsch, A. P. Gerratt, S. P. Lacour	Gallium-based electronic skin for wearable devices
13	A.C. Schmid and F.C. Hummel	Home-Based motor training enhanced by self-application of non-invasive brain stimulation in healthy older adults
14	S. Wurth, J. Gandar, M. Capogrosso, A. Cutrone, N. Pavlova, P. Shkorbatova, E. d'Anna, Q. Barraud, S. Raspopovic, F. Wagner, K. Minassian, S. Micera, G. Courtine	Hybrid peripheral-spinal neuroprosthesis for refined motor execution after paralysis
15	T. Porssut, H. Galvan-Debarba, E. Molla, R. Boulic	Immersive Interaction Group
16	M.J.I. Airaghi Leccardi, L. Ferlauto, N. Chenais, T.J. Wolfensberger, K. Sivula, D. Ghezzi	Injectable, self-opening, and freestanding retinal prosthesis for fighting blindness
17	X. Kang, G. Schiavone, N. Vachicouras F. Fallegger, S.P. Lacour	Iridium and iridium oxide based nafion composite coatings for neural electrical stimulation
18	L. Randazzo, I. Iturrate, S. Perdikis, J.d.R. Millán	Mano: A Wearable Hand Exoskeleton for Activities of Daily Living and Neurorehabilitation
19	S. Gribi, S.P. Lacour	Nerve-on-a-chip platform for the development of neuroprosthetic application
20	M. Pereira*, N. Faivre*, I. Iturrate*, L. Serafini, S. Martin, A. Desvachez, O. Blanke, D. Van De Ville, J.d.R. Millán	Neural processing of self-committed and observed action monitoring
21	I. Seanez and G. Courtine	Neuromodulation and Robotic Assistance to Enable Locomotor Control in Neurologically Impaired Individuals

22	M. Bassolino, M. Franza, J. Bello Ruiz, M. Pinaridi, T. Schmidlin, M. Stephan, M. Solcà, A. Serino, O. Blanke	Non-invasive brain stimulation for embodiment
23	K. Bartholdi and G. Courtine	Noradrenergic pathways and epidural electrical stimulation synergistically modulate proprioceptive feedback circuits in order to restore locomotion after spinal cord injury
24	V. Gaillet, M.J.I Airaghi Leccardi, D. Ghezzi	Optimization of stimulation parameters and characterization of new electrode properties for electrical stimulation of the optic nerve
25	F. Michoud, L. E. Browne, P. Schönle, L. Sottas, L. Asboth, A. Latremolière, Q. Huang, C. J. Woolf, S. P. Lacour	Optogenetic control of the peripheral nervous system in freely-behaving mice
26	R. Schulz*, P. Koch*, M. Zimerman, M. Wessel, M. Bönstrup, G. Thomalla, B. Cheng, C. Gerloff, F.C. Hummel	Parietofrontal motor pathways and their association with motor function after stroke
27	N. Chenais, M.J.I. Airaghi Leccardi, L. Ferlauto, K. Sivula, D. Ghezzi	Photovoltaic stimulation of retinal ganglion cells with wide-field epiretinal prosthesis
28	L. Freitas, T. A.W. Bolton, D. Jochaut, A.L. Giraud, P. Hüppli, D. Van De Ville	Psychophysiological Interaction of Co-Activation Patterns (PPI-CAPs): Tracking Task-Dependent Brain Activity
29	K. Zhuang, N. Sommer, E. Formento, E. D'Anna, A. Billard, S. Micera	Real-time decoding of hand movements from surface electromyograms
30	E. Blondiaux Garcia, G. Rognini, M. Akselrod, J. Potheegadoo, R. Salomon, M. Hara, O. Blanke	Right dominant fronto-parietal cortices mediate specific psychosis-like states induced by sensorimotor conflicts: a robotics-fMRI study
31	N. Kinany, E. Pirondini, R. Martuzzi, L. Mattera, D. Van De Ville, S. Micera	Rostrocaudal activation patterns in the human cervical spinal cord identified by fMRI during upper limb motor tasks
32	T. Corbet, I. Iturrate, M. Pereira, S. Perdikis, J.d.R. Millán	Sensory threshold electrical stimulation enhances classification of motor imagery
33	E. D'Anna, G. Valle, I. Strauss, J. Patton, F. M. Petrini, S. Raspopovic, G. Granata, R. Di Iorio, T. Stieglitz, P. Rossini, S. Micera	Simultaneous tactile and proprioceptive feedback in myo-controlled hand prostheses using intraneural electrical stimulation
34	J. Macron, M. Shur, S. Abuhattum, J. Guck, S.P. Lacour	Soft Hydrogel Materials for a New Generation of Neuroimplant
35	T.A.W. Bolton, A. Tarun, V. Sterpenich, S. Schwartz, D. Van De Ville	Sparse coupled hidden Markov models to probe temporally overlapping functional network interactions
36	O. Blanke, F. Bernasconi, E. Blondiaux, N. Faivre, S. Gallo, L. Jenni, S. Konik, P. Orepic, J. Potheegadoo, P. Progin, G. Rognini, S. Sidjanski, G. Stripeikyte	Stop Hallucination Project
37	F. Fallegger, A. Hirsch, G. Schiavone, N. Vachicouras, F. Wagner, E. Pralong, G. Courtine, J. Bloch, S.P. Lacour	Stretchable, thin-film technology μECoG for brain recordings in large animal models for next generation BCIs
38	P.K. Jao, R. Chavarriaga, J.d.R. Millán	Symbiotic Drone: Workload measurement in a drone piloting task - An EEG approach
39	C. Schneider, L. Tonin, J.d.R. Millán	The role of online feedback in covert attention based brain computer interfaces
40	M. Franza, G. Sorrentino, M. Vissani, A. Serino, O. Blanke, M. Bassolino	TMS-evoked hand sensation: a psychometrical approach
41	E. Raffin and H.R. Siebner	Tracing finger-specific motor reorganization within the primary motor hand area: effects of training and immobilization
42	A. Tarun, Y. Farouj, F. I. Karahanoğlu, V. Sterpenich, S. Schwartz, D. Van De Ville	Transient brain activity reveals spatiotemporal organization of functional networks during rest and sleep
43	D. Zoeller, T.A.W. Bolton, M. Schaer, S. Eliez, D. Van De Ville	Transient-informed spatio-temporal regression for robust recovery of overlapping functional networks
44	N. James and G. Courtine	Translational specificity of epidural electrical stimulation in the rodent and primate cervical spinal cord
45	M. Solcà*, V. Krishna*, N. Young, R. Mange, B. Herbelin, A. Serino, A. Rezaï*, O. Blanke*	Virtual reality-enhanced spinal cord stimulation for controlling pain



Impérial Palace

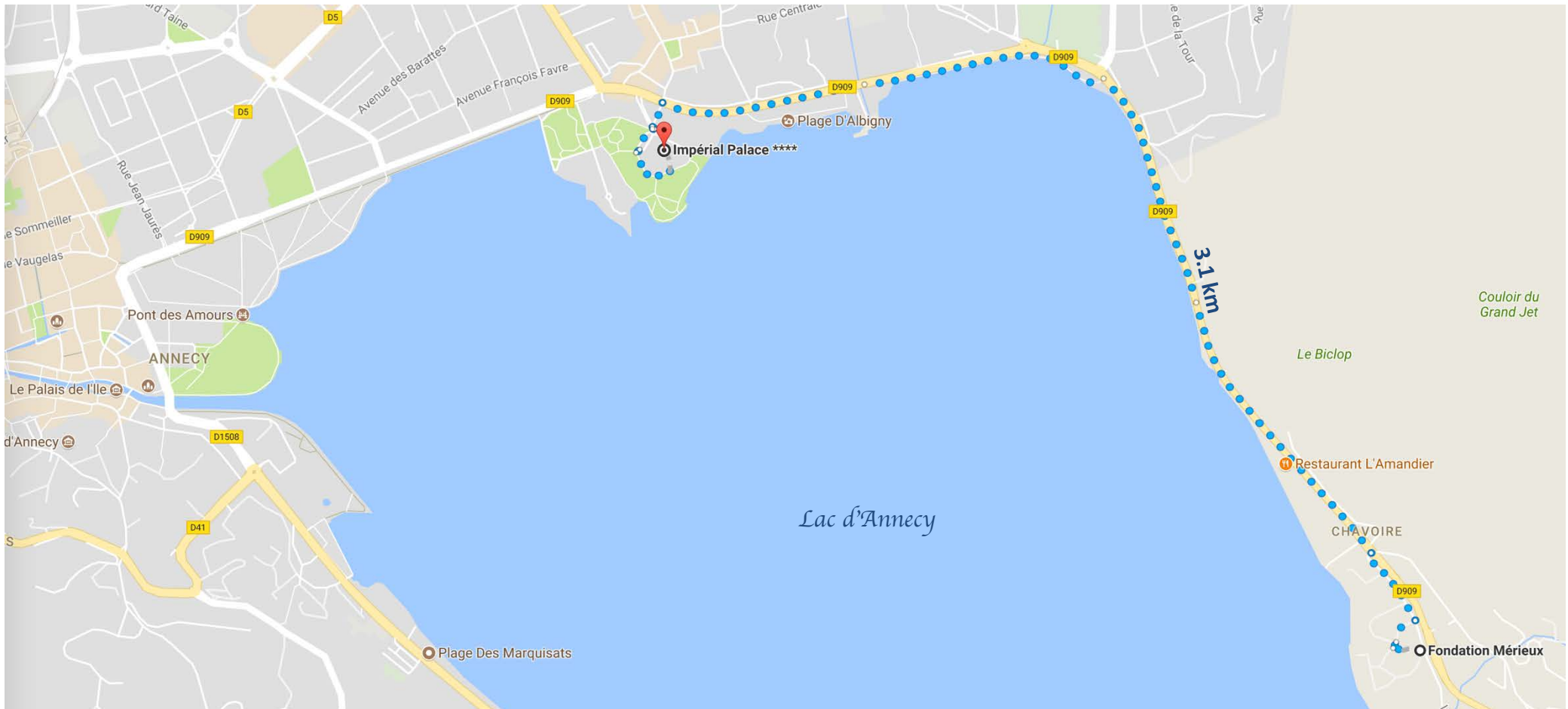
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