Over the last 15 years the knowledge about the brain functional organization experienced new energy and remarkable advances, as effect of technical and conceptual improvements that lead us in the connection era. The comprehension of this brain organization and the application of the new concepts to the connectome organization to the clinic-surgical practice, are two crucial steps to tailor and improve surgical and non-surgical treatments of brain diseases. In this interdisciplinary and clinical-neurosciences should be strictly integrated to improve surgical and non-surgical practice, are two crucial steps to tailor and improve surgical and non-surgical treatments of brain diseases. In this interdisciplinary and clinical-neurosciences should be strictly integrated to improve surgical and non-surgical treatments of brain diseases.

Aims of the theoretical sessions are to provide: a detailed and complete overview about the recent models of structural and functional connectivity of the brain; theoretical and practical principles for the clinical application of non-invasive brain mapping techniques, as effect of technical and conceptual improvements that lead us in the connection era; a detailed and complete overview about the recent models of structural and functional connectivity of the brain; theoretical and practical principles for the clinical application of non-invasive brain mapping techniques; open discussions with different experts about use, experience and relevance of the main tools for brain anatomy-functional mapping and monitoring during brain surgery.

Aims of the practical sessions are to provide the following principles of: human white matter anatomy; non-invasive brain mapping with RS-fMRI. We imagined an international opportunity for facing off clinical and basic neurosciences, in order to improve our skills in the exploration of the brain functional processing for medical purposes. We hope you will share this belief and to meet you in Trento in June 2019.
Thursday June 20th, 2019
Congress Venue for Theoretical Session
Sala Stringa - FBK
Via Sommarive, 18
Povo Trento

13:00 Registration and welcome drink
Povo Trento
Via Sommarive, 18
Sala Stringa - FBK
Congress Venue for Theoretical Session
Thursday June 20th, 2019

14:30
Chairmen: Bruno Giometto, Laurent Petit
Principles of RS-fMRI for human brain mapping
Franco Chioffi (Division of Neurosurgery, “Santa Chiara” Hospital, Trento APSS)

14:15 Course Introduction: Silvio Sarubbo and Franco Chioffi

13:30 Authorities welcome

18:00 17:30 Discussion and Questions

SESSION I
Exploration of brain structures and functions – Principles
Chairmen: Bruno Giometto, Laurent Petit
14:30 Principles of RS-fMRI for human brain mapping
Bernard Mazoyer (GIN, University of Bordeaux)
14:50 Techniques and limitations in tractography
Maxime Descoteaux (University of Sherbrooke)
15:10 How to track the brain: tools
Paolo Aversani (NIAB, FBK)
15:30 Discussion and Questions
16:00 Coffee break

SESSION II
Exploration of brain structures and functions – Tools
Chairmen: Umberto Rozzanigo, Alessandro De Benedictis
16:30 The human brain pathways by tractography
Laurent Petit (GIN, University of Bordeaux)
16:50 Extracting brain networks by rs-fMRI
Jorge Jovicich (CiMeC, University of Trento)
17:10 Neurophysiology tools for neurosurgery
Francesco Sala (University of Verona)
17:30 Discussion and Questions
18:00 Lecture (introduced by Ernesto Gastaldo, Ospedale PoliclinicoUniversitario di Udine)

SESSION III
Brain mapping for surgery
Chairmen: Alessandro Ducati, Silvio Sarubbo
09:00 Lecture
 Awake surgery for brain gliomas: cognition through the anatomy
Hugues Duflau (University of Montpellier)
09:40 Pre-surgical mapping with MRI and rs-MRI
Natalie Watts (Oxford University)
10:00 Language and motor mapping: intra-operative techniques
Rocco Quatraro (Ospedale dell’Angelo, Mestre-Venice)
10:20 Discussion
10:30 Coffee break

SESSION IV
Principles of functional anatomy of the human brain
Chairmen: Domenico O’Davella, Marco Fontanella
11:00 Language networks: anatomy and functions
Alessandro De Benedictis (Bambino Gesù Pediatric Hospital, Rome)
11:20 Motor networks: physiology and surgical mapping
Lorenzo Belli (University of Milan)
11:40 Insula and temporal stem anatomy
Emmanuel Mandorret (Jarlbolesièr University-Hospital, Paris)
12:00 Discussion and Questions

SESSION V
Surgical Techniques
Chairmen: Benedetto Petralia, Rocco Quatraro
12:20 Insular tumors: techniques and pitfalls
Miran Skrap (“S. Maria della Misericordia” Hospital, Udine)
12:40 Awake surgery for unruptured cerebral aneurysms
Franco Chioffi, (“S. Chiara” Hospital, APSS Trento)
13:00 Discussion and Questions
13:30 Lunch

Friday June 21st, 2019

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Franco Chioffi, (“S. Chiara” Hospital, APSS Trento)
13:00 Discussion and Questions
13:30 Lunch

Friday June 21st, 2019
SESSION VI
Neuropsychology
Chairmen: Flavio Anglèr, Andreas Schwarz
15:00 Extensive neuropsychological monitoring for resection of brain gliomas
Tamara kui iP. Maria della Misericordia” Hospital, Udine)
15:20 Cognitive rehabilitation: techniques and tools
Lorella Battelli (Italian Institute of Technology, Trento)
15:40 Discussion and Questions
16:00 Coffee break

SESSION VII
Epilepsy Surgery
Chairman: Marco Farneti, Alberto Motoni
16:30 Disconnect approach in epilepsy surgery
Carlo Marras (Bambino Gesù Children Hospital, Rome)
16:50 Imaging post-processing in epilepsy surgery
Michele Rizzi, Francesco Cardantine (“C. Munari” Epilepsy Surgery Center, Milan)
17:10 Discussion and Questions
17:30 Lecture (introduced by Franco Chioffi, APSS Trento)
Brain Mapping, extent of resection and new trends in neuro-oncological surgery
Mitchell Berger (University of California, San Francisco)
18:40 Closure and Certificates

Saturday June 22nd, 2019
Congress Venue for Practical Session
Open space – FBK
Via Sommarive, 18
Povo Trento
Planning practice Connect Brain Vol. II

Practical Session
Tractography session and resting-state fMRI Mapping
Tutors for rs-fMRI:
Voets N., Jovicich J., Zigiotto L., Novello L., Saviola F., Corsini F., Amnicchiatto L.
Tutors for Tractography:
Petit L., Descoteaux M., Sarubbo S., De Benedictis A., Avesani P., Novello F., Astolfi E.

08:30 Activities overview and team introduction
S. Sarubbo
08:45 Practical introduction: cases presentation
S. Sarubbo, L. Amnicchiatto
09:00 Pattern recognition of resting-state fMRI networks:
Language, Visual, Motor, Default Mode and Speech Arrest Networks
09:15 Launching ReStNeuMap tool and results exploration
L. Novello, F. Saviola
09:30 ReStNeuMap launch (case 1)
09:45 Practical demonstration of tracking: pyramidal tract (case 1 with CSD)
L. Petit, A. De Benedictis
09:55 Tracking at tables; pyramidal tract (case 1)
10:40 Motor network and Speech Arrest network identification (case 1)
N. Voets, L. Novello, F. Saviola
11:00 Comments on results and open coffee
11:15 Practical demonstration of tracking: AF and SLF III
L. Petit, A. De Benedictis
11:45 Tracking at tables; AF and SLF III (case 2)
12:45 Comments on results
13:00 Lunch
14:00 Language, Default Mode Network and Speech Arrest Network identification (case 2)
N. Voets, L. Novello, F. Saviola
14:30 Practical demonstration of tracking: IFOF/UF
L. Petit, A. De Benedictis
14:45 Tracking at tables; IFOF/UF (case 2)
15:45 Comments on results and open coffee
16:00 Visual network identification (case 3)
N. Voets, L. Novello, F. Saviola
16:15 Practical demonstration of tracking: Optic Radiation
L. Petit, A. De Benedictis
16:30 Tracking at tables; Optic Radiation (case 3)
17:30 Comments on results and open coffee
17:45 Functional considerations from the operating room
(x-ray and photo) on the cases planning
S. Sarubbo, L. Zigiotto
18:15 Closure remarks
18:30 Certificates