Call for papers on
Dynamics of Signal Exchanges
Special Session of the 27th Italian Workshop on Neural Networks WIRN 2017
https://wirn2017.polito.it/

WIRN 2017 is sponsored by the *Italian Society of Neural Networks* (SIREN, **www.associazionesiren.org/**) in co-operation with the *International Institute for Advanced Scientific Studies* (IIASS, **www.iiassvietri.it**)

June 14-16, 2017, Vietri sul Mare, Salerno, Italy.
Instructions on how to reach the Conference Location are on www.iiassvietri.it

I.   **PROGRAM CO-CHAIRS AND CONTACTS:**
      Anna Esposito, Antonietta M. Esposito, Sara Invitto, Nadia Mammone, Gennaro Cordasco, Mauro Maldonato, Francesco Carlo Morabito

Anna Esposito is with the Università della Campania "Luigi Vanvitelli", Department of Psychology and the International Institute for Advanced Scientific Studies (IIASS). Email: iiass.annaesp@tin.it

Antonietta M. Esposito is with the Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Napoli Osservatorio Vesuviano, Napoli, Italy. Email: antonietta.esposito@ingv.it

Sara Invitto is with the Department of Biological and Environmental Sciences and Technologies University of Salento, Lecce, Italy. Email: sara.invitto@unisalento.it

Nadia Mammone is with the IRCCS Centro Neurolesi, Messina, Italy. Email: nadiamammone@tiscali.it;

Gennaro Cordasco Università della Campania "Luigi Vanvitelli", Department of Psychology and the International Institute for Advanced Scientific Studies (IIASS). Email: gennaro.cordasco@unicampania.it

Mauro Maldonato is with the Università della Basilicata, Potenza, Department of Human Sciences, Italy. Email: m.maldonato@gmail.com

Francesco Carlo Morabito is with the Università degli Studi "Mediterranea" di Reggio Calabria, Italy. Email: morabito@unirc.it;

II. THEMES AND SCOPE OF THE SESSION

The themes of this special session are multidisciplinary in nature, and closely connected in their final aims to identify features from realistic dynamic of signal exchanges. Such dynamics characterize, formal and informal social signals, communication modes, hearing and vision processes, and brain functionalities. Of particular interest are analyses of visual, written and audio information and corresponding computational efforts to automatically detect and interpret their semantic and pragmatic contents. Related applications of these interdisciplinary facets are ICT interfaces able to detect health and affective states of their users, interpret their psychological and behavioral patterns and support them through positively designed interventions to improve their quality of life.

III. TOPICS

Topics include but are not limited to:
- Signals for detecting affective wellbeing and emotional states
- Detection of health and psychological states from multimodal signals
- Social networks for information spread and share
- Empathic ICT interfaces
- Computational Architectures for Affective Systems
- Supervised and Unsupervised Learning Algorithms in Affective Systems
- Human and/or machine encoding and decoding of behavioral patterns
- Human daily cognitive activities
- More

IV.IMPORTANT DATES
- Paper Submission: **May 30 2017**
- Notification of acceptance: **June 10, 2017**
- Camera-ready copy: **on site June 14 2017**
- Conference Dates: **June 14-16, 2017**

V. PUBLICATION AND PAGE LIMITATIONS

- The accepted contributions will be published on the Springer series on "**Smart Innovation Systems and Technologies"** (see http://www.springer.com/series/8767 for the download of the paper format). The maximum length of the **full paper is 8 -10 pages**. The manuscripts should be submitted through Easy Chair conference system using the following website address: https://easychair.org/conferences/?conf=wirn2017.

- Log in your Easy Chair account or register for it and log in. Please specify the name of the special session : *"Dynamics of Signal Exchanges"*
- Please do not hesitate to contact Anna Esposito (iiass.annaesp@tin.it) or Gennaro Cordasco (gennaro.cordasco@unina2.it) for further clarifications

VI. REGISTRATION FEE

- The registration fee is **250 euros** and **include the social dinner.** Registration can be done on site (**using cash**) or through bank transfer (the receipt must be exhibited at the conference).
  - \> > Bank Name: UBI-Banca Carime
  - \> > Branch: Filiale di Salerno - Agenzia Centrale [6701]
  - \> > IBAN: IT26K0306715201000000022400
  - \> > BIC/SWIFT CODE: CARMIT31
  - \> > Reason: WIRN 2017 conference

- For further details contact Miss Tina Nappi, email: t.nappi@iiassvietri.it)

VII. INVITED SPEAKERS

PROFESSOR Michela Balconi, http://docenti.unicatt.it/eng/michela_balconi/

Michela short bio: Michela Balconi, is Professor of "Neuropsychology and Cognitive Neuroscience", "Neuropsychology of Communication", and "Neuroscience of Well-being in the Lifespan" at the Faculty of Psychology of the Catholic University of the Sacred Heart, Milan and Brescia and leads the Research Unit in Affective and Social Neuroscience (www.psychoneuronet.com).

Michela's research interests mainly concern Cognitive Neuropsychology and Psychophysiology. In agreement with the relevance of a proper integration between the body and the mind, she has studied and introduced new methods to analyse and explore the relationship between affective, communication and cognitive processes and physiological markers – e.g. the application of fNIRS (*functional Near-Infrared Spectroscopy*) technique and EEG frequency bands analysis to the investigation of social-affective processes and consciousness correlates, and the use of non-invasive brain stimulation (TMS, *Transcranial Magnetic Stimulation*, and tES, *transcranial Electric Stimulation*) in clinical and experimental contexts.

She is founder and Editor-in-Chief of the international peer-reviewed online journal "Neuropsychological Trends" (indexed in PsycINFO and SCOPUS).

Michela is member of many prestigious national and international neuropsychology societies and associations, among those the International Neuropsychological Society (INS), the International Brain Research Organization (IBRO), the Federation of the European Societies of Neuropsychology (FESN). Further, she is member of the Managing Committee of the Italian Society of Psychophysiology (SIPF), and auditor and member of the Ethics Committee of the Italian Association of Psychology (AIP).

Talk Title: *Two more than one. The effect of cooperation on intra- and inter-brain connectivity*

Abstract: Inter-brain synchronicity during joint actions is a core question of study on social interactions, but the specific contribution of intra and inter-brain functional connectivity still remains to be answered. Moreover, the intervention of psychological variables must be taken into account, such as self-perceived efficacy induced by an external feedback during interaction towards the adoption of common strategies. The cognitive performance and the neural activation underlying the execution of joint-actions were explored by functional Near-Infrared Spectroscopy (fNIRS) during a synchronicity game where dyads of participants received reinforcing feedbacks. Intra and inter-brain connectivity indices were computed, along with a ConIndex (inter-brain/intra-brain connectivity) within the prefrontal cortex. Finally, correlational measures were considered to assess the relation between these different levels. Results showed that the external feedback was able to modulate participants' responses in both behavioral and neural components with faster RTs after the reinforce and increased inter-brain connectivity and ConIndex, mainly localized within the DLPFC. Moreover, the presence of significant correlations between RTs and inter-brain connectivity revealed that only the "two-players connection" may guarantees an efficient performance. These results provided significant contribution to the identification of patterns of intra and inter-brain functional connectivity when social reinforce is provided within dyads of participants cooperating together.