



Università  
di Catania



# Coping with the Brain: Technologies for Human Wellness

**Date:** December 6, 2024

**Live Venue:** Aula Magna Oliveri, Cittadella Universitaria, Via Santa Sofia 64, Catania

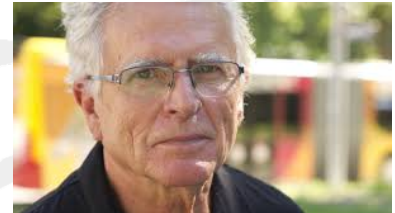
**Online:** [Microsoft Teams - Link](#)

This workshop is a one-day event organized in the context of the project PRIN HOME4.0: Brain Signal Humanoid Integrated Home Assistant Platform.

**FOCUS:** The pathological states leading to severe damage to the neuromuscular channels, disables the patient to have control over its external environment. In the absence of methods for repairing the damage done by these disorders, an option for restoring function to those with motor impairments is to provide the brain with a new, non-muscular communication and control channel as human-machine systems or brain-computer interface (BCI).

## Keynote Speech

**Prof. Niels Birbaumer** is a professor emeritus of Behavioral Neuroscience at the University of Tübingen (Germany) and Padova (Italy). He is one of the most cited Neuroscientist worldwide (Citations 128860, h-index 173), a component of the German National Academy of Science, and the author of popular scientific books, including "Your brain knows more than you think" (also in German, Italian, Korean, Farsi, Czech). He lives in Venice.



## Invited Speakers



**Prof. Alberto Mazzoni** is Associate Professor in Bioengineering at The Biorobotics Institute of the Sant'Anna School, where he is the PI of the Computational Neuroengineering Laboratory. His research interests focus on neural signal analysis and neural network simulation for the study of neurological dysfunctions and the development of neuromodulation therapies. He holds a degree in Theoretical Physics from the University of Pisa and a PhD in Neuroscience from SISSA in Trieste.



**Dr. Luca Randazzo** is CEO at [Emovo Care](#), developing a medical device hand exoskeleton for "therapy while living" - to improve clinical benefits through therapy blended with daily living. Luca worked at NASA JPL, and IIT Torino. He holds a Ph.D. in Robotics from EPFL, M.Sc. in Mechatronics Eng from Politecnico di Torino, M.Sc. in Automation Engineering from Politecnico di Milano, and a B.Sc. in Computer Eng from Università di Catania.



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09:30	Welcome <b>Prof. Salvo Baglio and Prof. Maide Bucolo</b>
09:45	<b>Keynote</b> <b>Speaker:</b> Prof. Niels Birbaumer, University of Tübingen / Wyss Center <i>"Your thoughts are (were) free: Brain Machine Interfaces and paralysis"</i> <b>Chair:</b> Prof. Maide Bucolo
10:30	<b>Coffe Break</b> <b>Talks Session</b> <b>Chair:</b> Prof. Helta Flor
11:00	<b>Speakers:</b> Prof. Lucia Pallottino, University of Pisa and Prof. Maide Bucolo University of Catania <i>"Project HOME4.0"</i>
11:30	<b>Invited Speaker:</b> Prof. Alberto Mazzoni, Sant'Anna School of Advanced Studies <i>"Decoding cortical, subcortical and peripheral neural activity"</i>
12:00	<b>Speaker:</b> Prof. Concetto Spampinato, University of Catania <i>"Wake and Sleep Consolidated Learning"</i>
12:30	<b>Invited Speaker:</b> Dr. Luca Randazzo, CEO EmovoCare <i>"Development of a non-invasive human-machine interface based on surface Electromyography to control a robotic hand exoskeleton"</i>
13:00	<b>Discussion</b>
13:30	<b>Lunch</b>

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