## 13 Dicembre 2019 ORE 14.30 MULTI-SCALE BRAIN IMAGING: FROM TWO-PHOTON MICROSCOPY TO FUNCTIONAL ULTRAFAST ULTRASOUNDS



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## DR. DAVIDE BOIDO

Davide Boido got an MSc in Physics and a PhD in Humanoid Technologies - Neuroscience at the Italian Institute of Technology in Genoa. He had a first post-doc period in Milan, working with Marco de Curtis on a seizure model of isolated whole brain of Guinea Pig. Further on, he joined Serge Charpak's lab in Paris. Now he is am at CEA Neurospin in Paris - Saclay.

The focus of his research is multi-modal imaging of brain activity and neurovascular coupling. He use multi-photon microscopy and blood flow-based neuroimaging in the same mice to assess quantitative links across the different imaging modalities.

BOLD fMRI and the recently developed ultrafast functional ultrasound (fUS) are wonderful tools to image the brain in action, but the extent to which they faithfully report the neural activity in time and space is still unclear. In my presentation I will highlight strengths and limitations of these techniques using a multi-scale approach on mice (Two-Photon Microscopy, BOLD fMRI and fUS). Finally, I will present some mathematical tools to infer neuronal activity from blood flow-based imaging data.



KNOWLEDGE IS SPEAKING, WISDOM IS LISTENING Jimi Hendrix