Contribution ID: **313** Type: **Talk in simposio**

Emotions modulation on interbrain dynamics

Wednesday, September 25, 2024 3:30 PM (20 minutes)

Social interactions imply dynamic and synergic feedback loops in which actions, reactions, and internal states of each partner is modulated by the others. In this framework, interacting brains appear to operate as an integrated system, showing shared neural dynamics coevolving over time. In-phase brain oscillation alignment have been found in interacting people, but also in monkeys, bats, and mice. However, how emotional alterations can influence interbrain synchrony (IBS) is still unclear. Here, combining microendoscopic calcium imaging within the Anterior Cingulate Cortex (ACC or Area 24) with a behavioral task for emotion recognition in mice, we find differences in IBS between pyramidal and somatostatin-expressing (SOM) neurons. SOM neurons show stronger correlation between a neutral observer and a stressed demonstrator. Moreover, disrupting SOM synchronization in ACC by optogenetics disrupts emotion recognition. Conversely, ACC pyramidal neurons show stronger interbrain correlation only in basal states (neutral-neutral interactions) and an anticorrelation with the socially-preferred stressed mouse. In agreement, artificial pyramidal neurons synchronization by optogenetics can induce a preference toward the non-synchronized mouse. Overall, these data reveal opposite involvement of ACC SOM and pyramidal neurons in interbrain synchronization in supporting emotion recognition.

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No

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Interacting with the world: from neurons to social behavior

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?

No

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