

# IGSN - SYMPOSIUM

Monday, June 20<sup>th</sup> 2022 • 15.00 (3 pm)

## Cerebellar learning beyond circuits, networks and oscillations

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### Cerebellar coordination of rhythms: implications for cognitive and motor functions

Rhythms are an essential element of animal life, as they provide the temporal scaffold for survival critical behaviors, such as breathing, walking, chewing, and swallowing. These rhythms are not independent but rather well-coordinated. Breathing and swallowing rhythms, for example, are precisely coordinated to prevent prandial aspiration. Rhythms, in form of network oscillations, also introduce a precise temporal structure in brain activity. Neuronal activity in nervous systems throughout the animal kingdom generate rhythms believed to be essential for both motor and cognitive functions. Like motor rhythms, these neuronal rhythms are not independent. Precise temporal coordination of neuronal oscillations has been observed in numerous experiments and shown to be linked to the performance of motor and cognitive tasks. I will present evidence supporting a cerebellar involvement in the coordination of rhythmic movements and of neuronal oscillations in the cerebral cortex and will discuss the implications of our findings for cerebellar cognitive functions.

**Host:**

VIOLETA CARAGEA

Department of Neurophysiology, Faculty of Medicine, Ruhr University Bochum

**Guests are welcome!**

