Reading out responses of large neural population with minimal information loss

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Classic studies show that in many species – from leech and cricket to primate – responses of neural populations can be quite successfully read out using a measure neural population activity termed the population vector. However, despite its successes, detailed analyses have shown that the standard population vector discards substantial amounts of information contained in the responses of a neural population, and so is unlikely to accurately describe how signal communication between parts of the nervous system.I will describe recent theoretical results showing how to modify the population vector expression in order to read out neural responses without information loss, ideally. These results make it possible to quantify the contribution of weakly tuned neurons to perception.I will also discuss numerical methods that can be used to minimize information loss when reading out responses of large neural populations.

Friday, April 9, 2021 03:00pm - 04:00pm

Online

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.