Practical aspects of Spike Sorting (supplementary materials)

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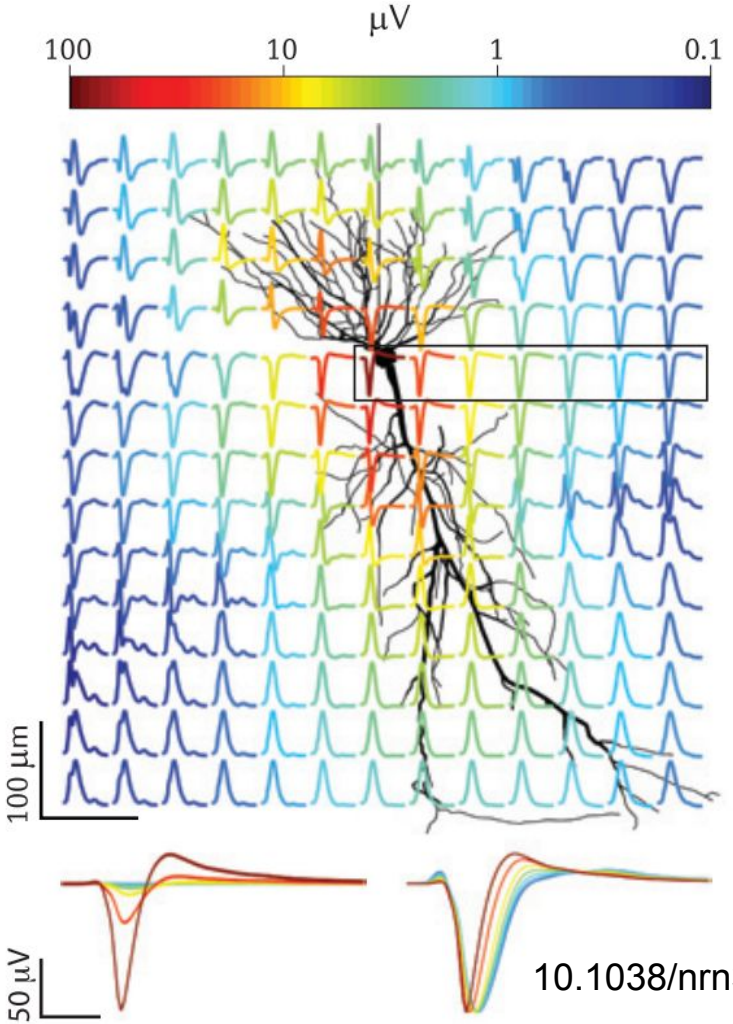
Фонд интеллект

What is spike sorting

Spike sorting is data **clustering** and **segmentation** problem using recordings of extracellular action potentials in order to find robust markers of exact cell activity

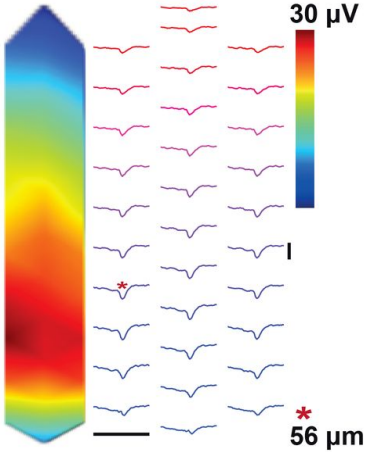


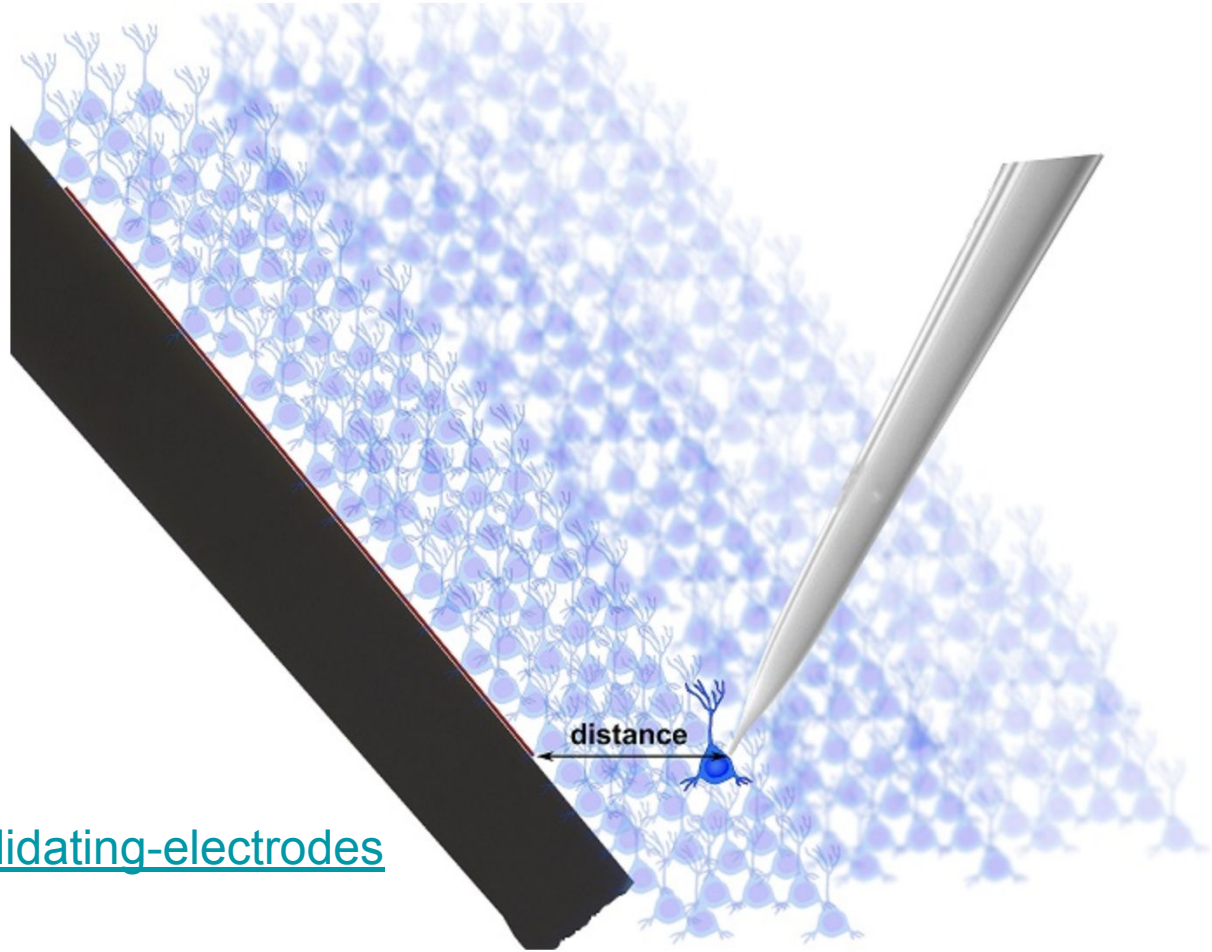
10.1038/nrn3241

Фонд интеллект

Dataset

Kampff Lab
Intelligent Systems



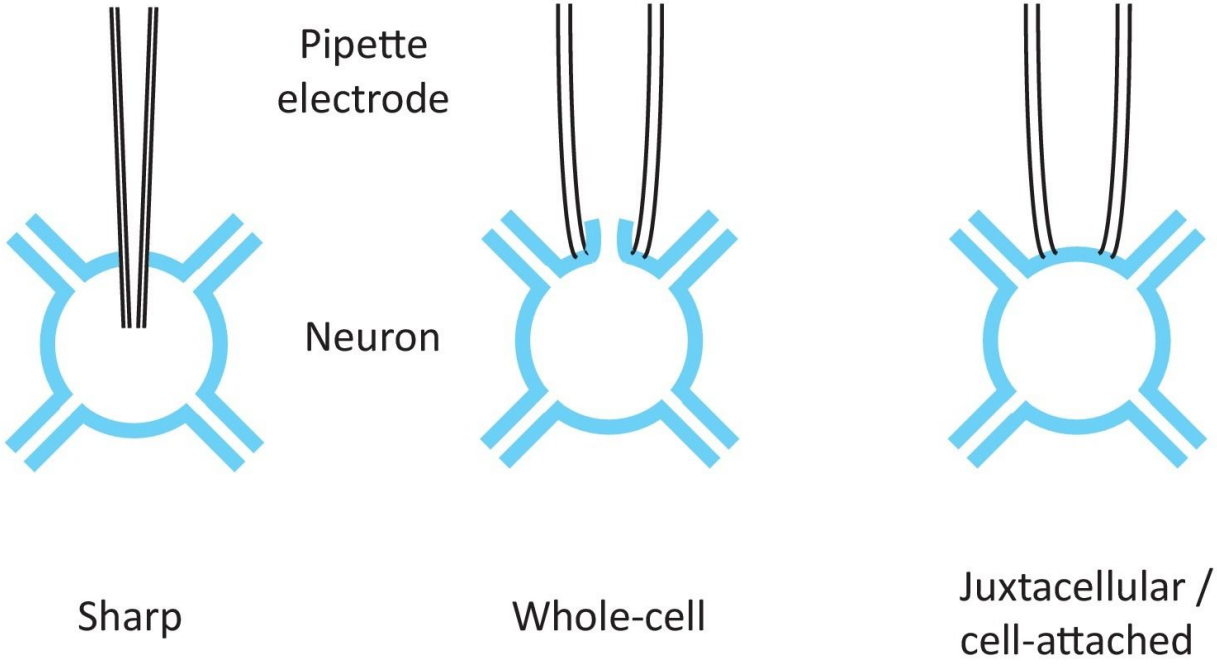


http://www.kampff-lab.org/validating-electrodes

Фонд интеллект

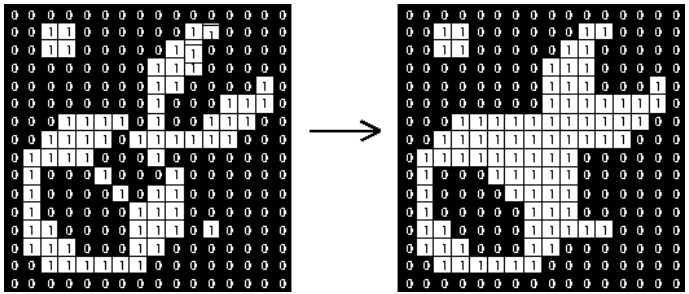
Paired-recordings from the intact brain.

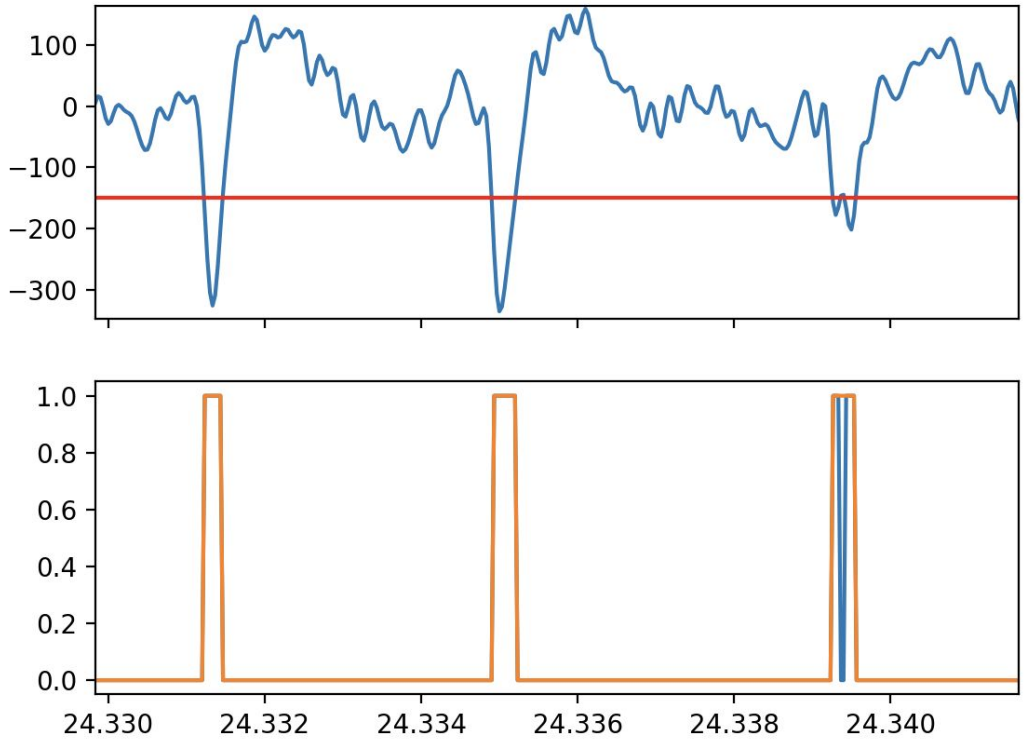
What is juxtacellular recordings?



Trends in Neurosciences

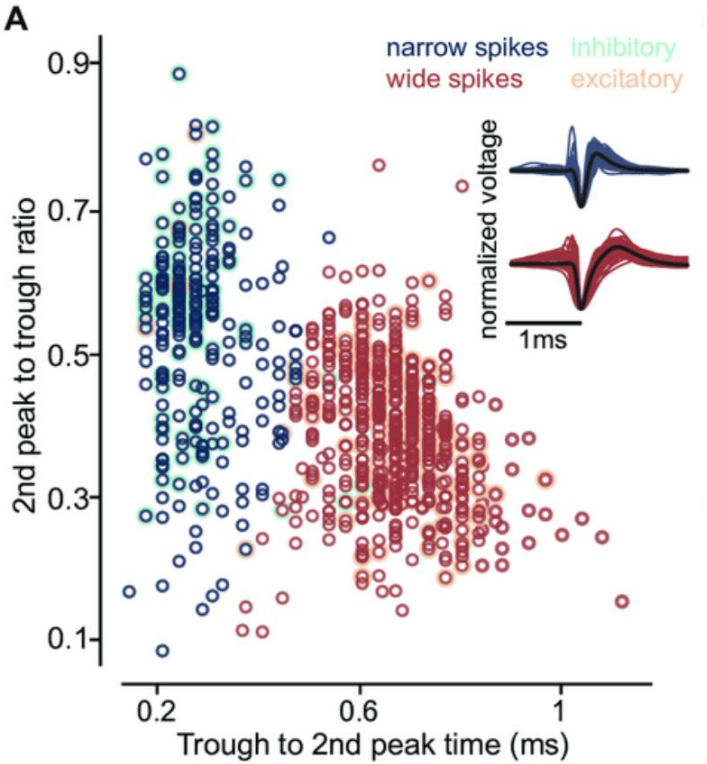
Binary closing



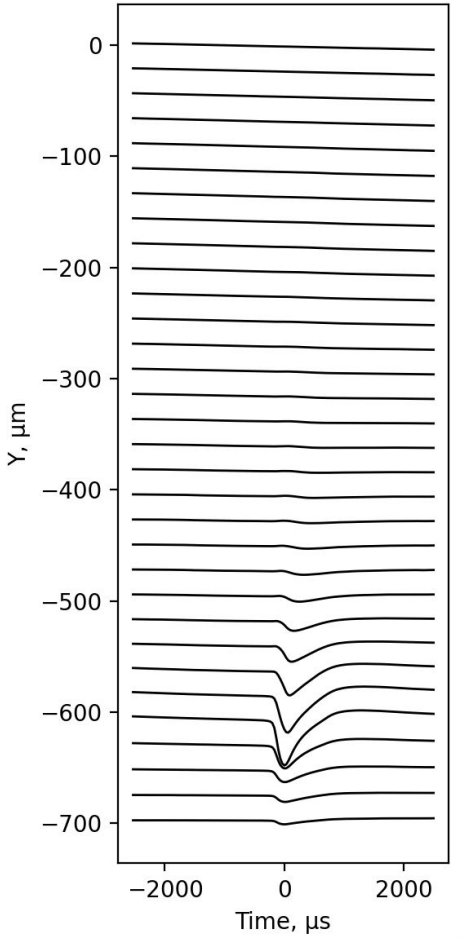


Фонд интеллект

Putative excitatory and inhibitory neurons



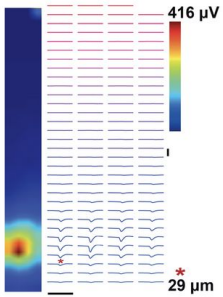
10.1101/2021.01.22.427789.



Фонд интеллект

Homework

Take the script and any of Neuroseeker probes and try to solve forward problem, try to construct these maps (these have better amplitudes)



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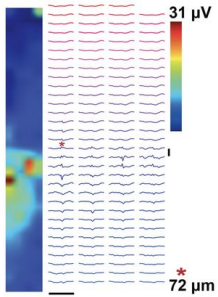

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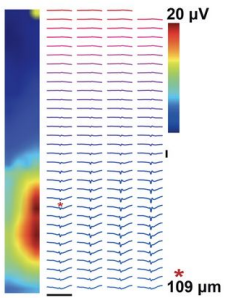

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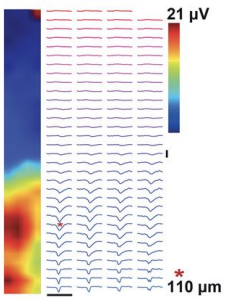

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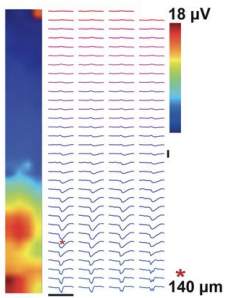

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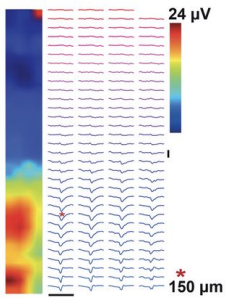

2015_09_09_Cell.6.0

Фонд интеллект

Popular spike sorters

Klusta (phy) — Python, obsolete, but robust

Spyking circus — Python, uses GPU

Kilosort v3 — Matlab, uses GPU, developed for NeuroPixel data (400 channels)

YASS — Python, uses GPU and Artificial Neural Networks

See also: SpikeInterface Python (https://elifesciences.org/articles/61834)