

Resource Summary Report

Generated by [ASWG](#) on Aug 4, 2026

kCSD-python

RRID:SCR_015777

Type: Tool

Proper Citation

kCSD-python (RRID:SCR_015777)

Resource Information

URL: <https://github.com/Neuroinflab/kCSD-python>

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Description: Source code for the Python implementation of the kernel Current Source Density method. The method operates in one-, two-, and three-dimensional space to perform nonparametric estimation of transmembrane current sources from local field potentials recorded from arbitrarily distributed electrodes.

Synonyms: kernel current source density method - python, kCSD inverse method, Kernel Current Source Density Method

Resource Type: software resource, source code

Defining Citation: [PMID:22091662](#)

Keywords: kernel current source density, 1d, 2d, 3d, python, local field potential, transmembrane current source

Availability: Free, Available for download

Resource Name: kCSD-python

Resource ID: SCR_015777

License: BSD 3-clause "New" or "Revised" License, Modified BSD License

License URLs: <https://github.com/Neuroinflab/kCSD-python/blob/master/LICENSE.txt>

Record Creation Time: 20220129T080327+0000

Record Last Update: 20260804T043613+0000

Ratings and Alerts

No rating or validation information has been found for kCSD-python.

No alerts have been found for kCSD-python.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 7 mentions in open access literature.

Listed below are recent publications. The full list is available at [ASWG](#) .

Khanzada S, et al. (2025) Dynamic mapping of network-level LTP in the hippocampus via high-resolution bioelectrical sensing. APL bioengineering, 9(3), 036109.

?redniawa W, et al. (2024) Local contribution to the somatosensory evoked potentials in rat's thalamus. PloS one, 19(4), e0301713.

Chintaluri C, et al. (2024) kCSD-python, reliable current source density estimation with quality control. PLoS computational biology, 20(3), e1011941.

?redniawa W, et al. (2021) Network and synaptic mechanisms underlying high frequency oscillations in the rat and cat olfactory bulb under ketamine-xylazine anesthesia. Scientific reports, 11(1), 6390.

Klein N, et al. (2021) Cross-population coupling of neural activity based on Gaussian process current source densities. PLoS computational biology, 17(11), e1009601.

, et al. (2018) 27th Annual Computational Neuroscience Meeting (CNS*2018): Part One. BMC neuroscience, 19(Suppl 2), 64.

Cserpán D, et al. (2017) Revealing the distribution of transmembrane currents along the dendritic tree of a neuron from extracellular recordings. eLife, 6.