

Resource Summary Report

Generated by [SPARC SAWG](#) on Sep 19, 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: 20260912T200358+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 [SPARC SAWG](#) .

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.