

Resource Summary Report

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Spatio- Spectro- Temporal Receptive Field

RRID:SCR_007995

Type: Tool

Proper Citation

Spatio- Spectro- Temporal Receptive Field (RRID:SCR_007995)

Resource Information

URL: <http://strfpak.berkeley.edu>

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Description: STRFPak is a Matlab toolbox for estimating the linear and nonlinear stimulus-response mapping function of sensory systems. This mapping function is commonly called the spatio- or spectro-temporal receptive field (STRF). A quantitative estimate of the STRF can be used in subsequent computational modeling studies or to predict future responses of the system. STRFPak implements several general STRF estimation techniques and can be used with any stimuli (including natural scenes and sounds). The theoretical basis for STRF estimation has been known for some time, but estimation software has not been widely available. This project aims to develop appropriate software and make it available to the wider community of sensory neuroscientists. Although STRFPak is based on established methods it incorporates two important innovations. First, STRFPak can be used to characterize a sensory system from its response to arbitrary stimuli including natural signals (e.g., vocalizations, natural scenes). Second, STRFPak incorporates several methods for estimating nonlinear STRFs. STRFPak also includes tutorial examples and documentation.

Synonyms: STRFPak

Resource Type: software resource

Keywords: matlab, neuroscience, nonlinear, receptive field, response, sensory, signal, spatio, spectro, stimulus, sensory system, temporal

Resource Name: Spatio- Spectro- Temporal Receptive Field

Resource ID: SCR_007995

Alternate IDs: nif-0000-07191

Record Creation Time: 20220129T080244+0000

Ratings and Alerts

No rating or validation information has been found for Spatio- Spectro- Temporal Receptive Field.

No alerts have been found for Spatio- Spectro- Temporal Receptive Field.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 6 mentions in open access literature.

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

Hullett PW, et al. (2025) Parallel encoding of speech in human frontal and temporal lobes. Nature communications, 17(1), 814.

Har-Shai Yahav P, et al. (2021) Linguistic processing of task-irrelevant speech at a cocktail party. eLife, 10.

Webster PJ, et al. (2016) Divergent Human Cortical Regions for Processing Distinct Acoustic-Semantic Categories of Natural Sounds: Animal Action Sounds vs. Vocalizations. Frontiers in neuroscience, 10, 579.

Ortiz-Rios M, et al. (2015) Functional MRI of the vocalization-processing network in the macaque brain. Frontiers in neuroscience, 9, 113.

Zion Golumbic EM, et al. (2013) Mechanisms underlying selective neuronal tracking of attended speech at a "cocktail party". Neuron, 77(5), 980.

Calabrese A, et al. (2011) A generalized linear model for estimating spectrotemporal receptive fields from responses to natural sounds. PloS one, 6(1), e16104.