

Large-scale *in-silico* investigation on the homeostasis within the subarachnoid space of the optic nerve, Rossinelli et al. 2023, *in-preparation*.

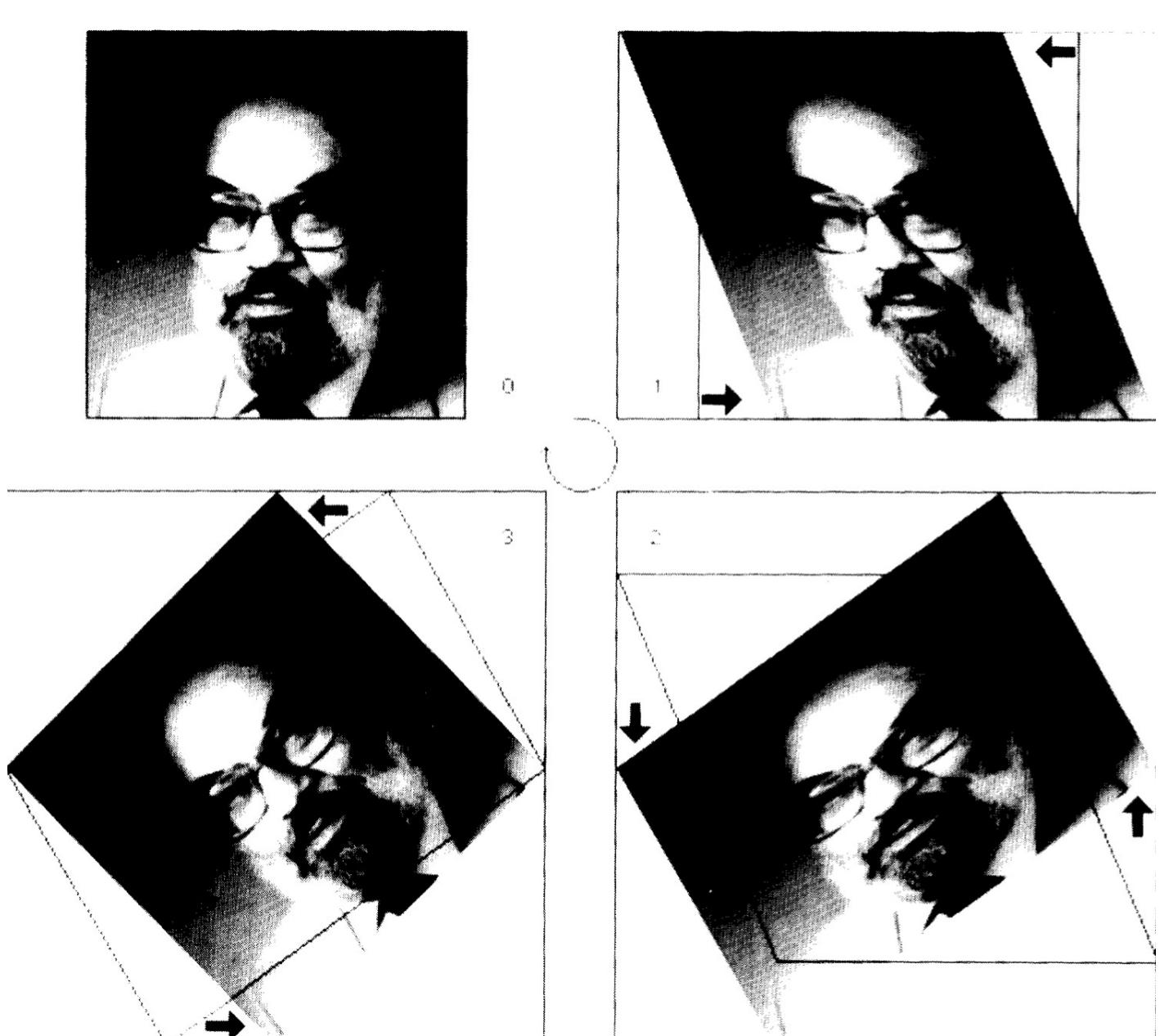
Homeostasis is directly related on interaction between the cerebrospinal fluid flow and the meningeal surface. Blue denotes poor levels of homeostasis, whereas red denotes sufficient levels.

## Motivation

The goal of the project is the implementation of a numerical method to rotate a multidimensional signal while maintaining both a high degree of accuracy and performance.

## Performance and Quality

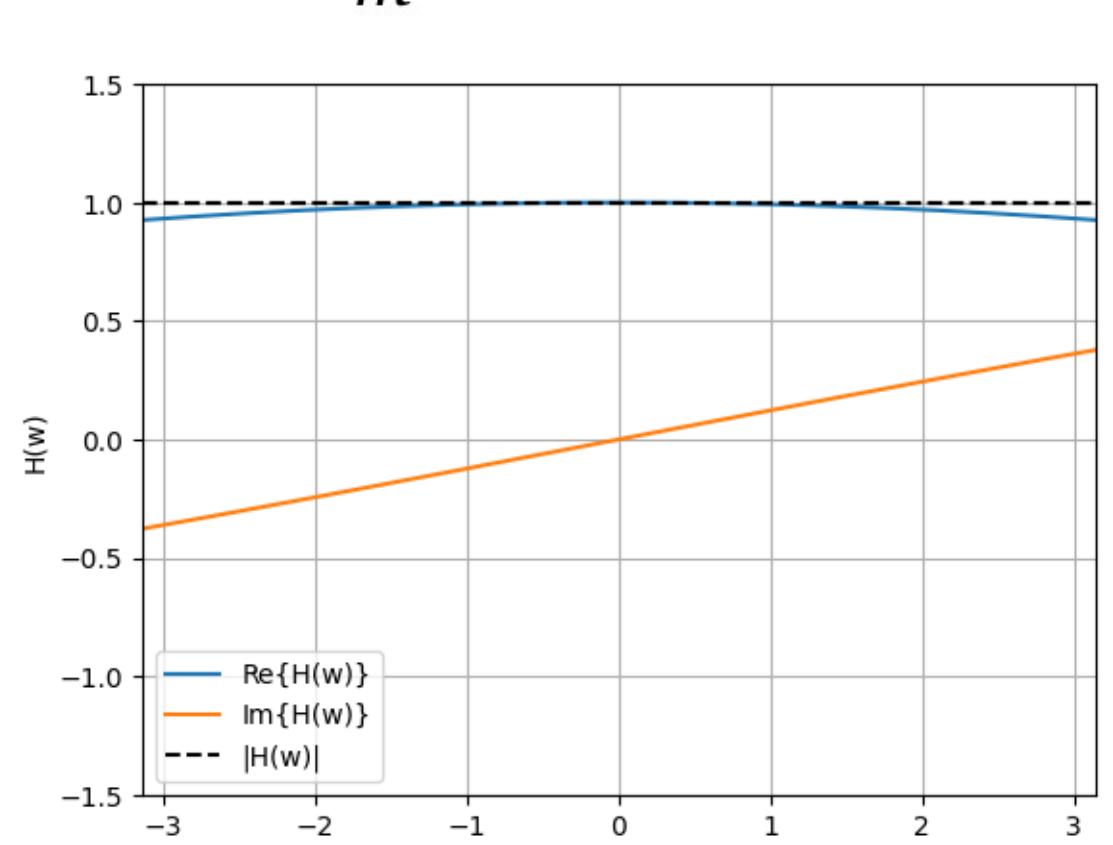
- Rotations expressed as sequence of 3 2D rotations.
- Data alignment for ray traversal and light attenuation calculations.
- 



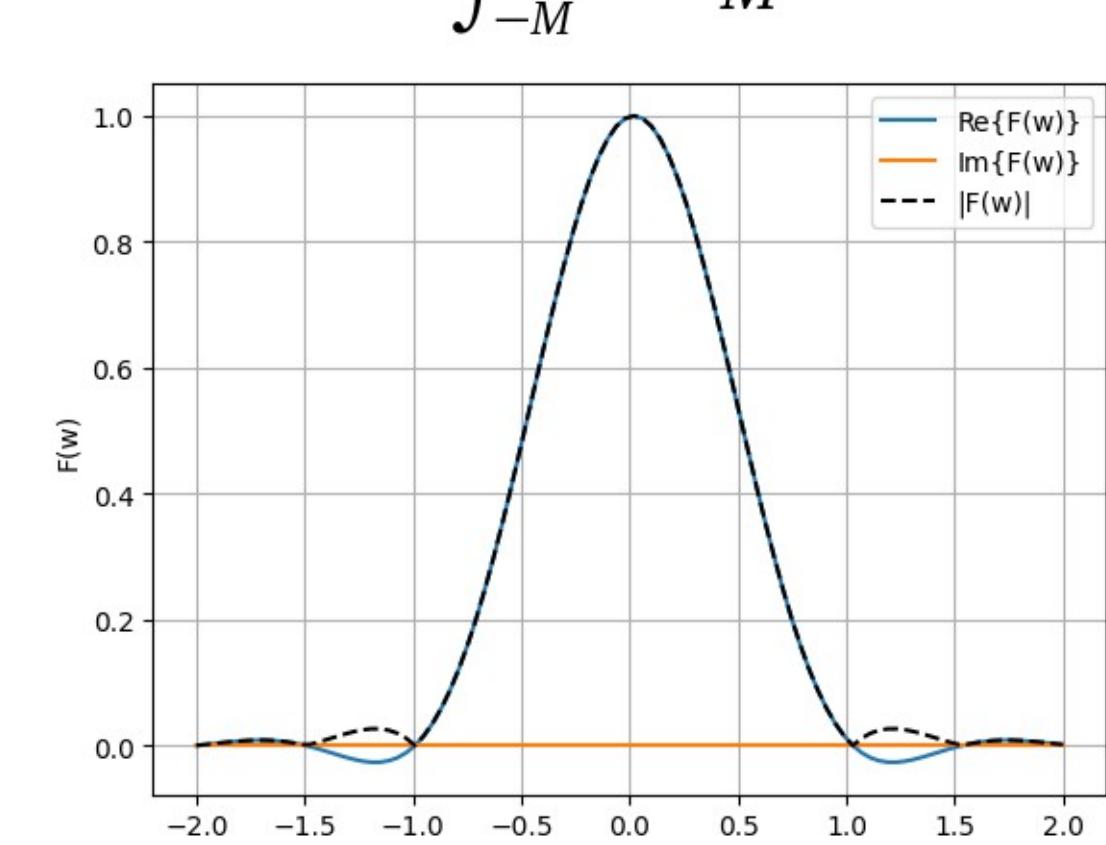
Three-pass rotation, Michael Unser

## Digital Filter Design / FIR

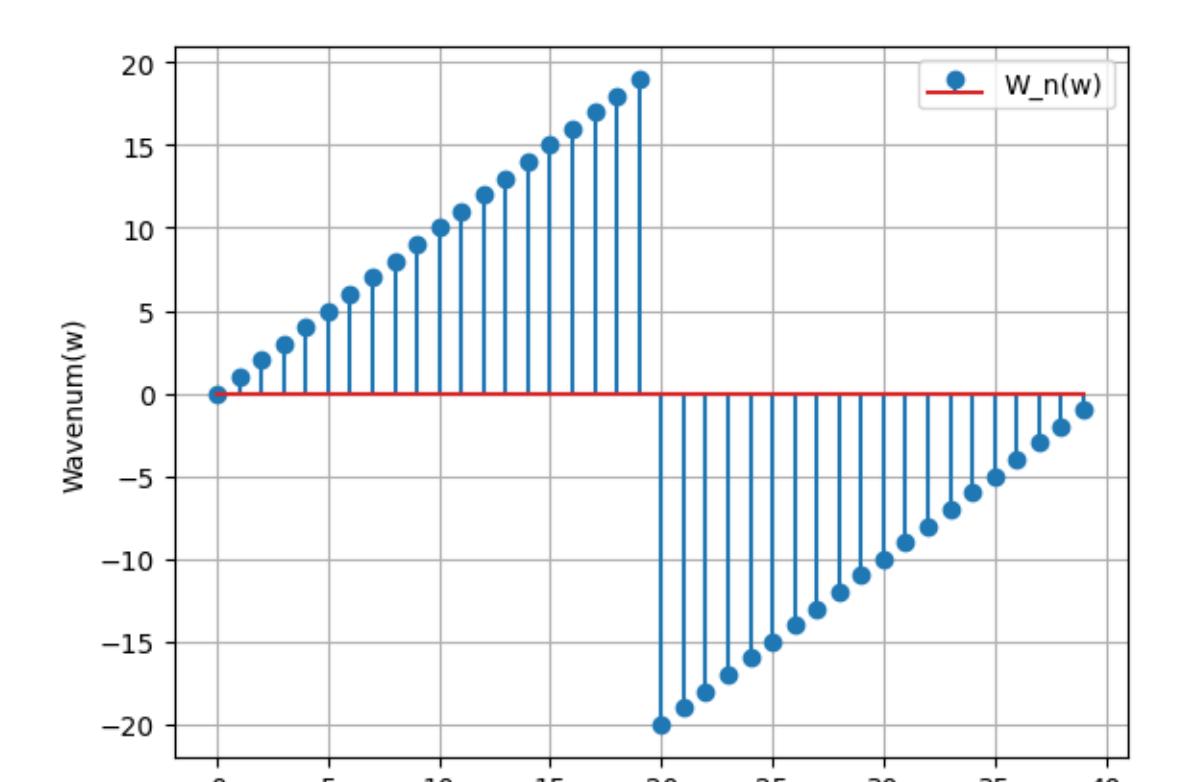
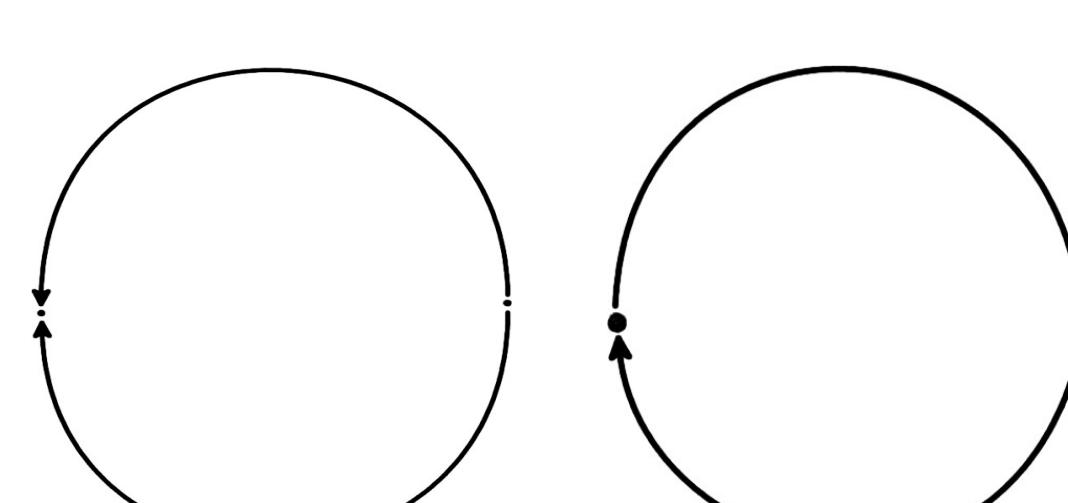
$$H_m = e^{-i \frac{2\pi}{N} \delta m}$$



$$F(\omega) = \int_{-M}^{M} \cos\left(\frac{\pi}{M} t\right) e^{-i\omega t} dt$$



## Frequency indexing



## Frequency analysis

### Three 1D translations of data

- ...
-