

Exercise II support

MRI & NIRS

A''

Aalto-yliopisto
Aalto-universitetet
Aalto University

Paavo Hietala & Olli Pikkarainen

28.1.2026

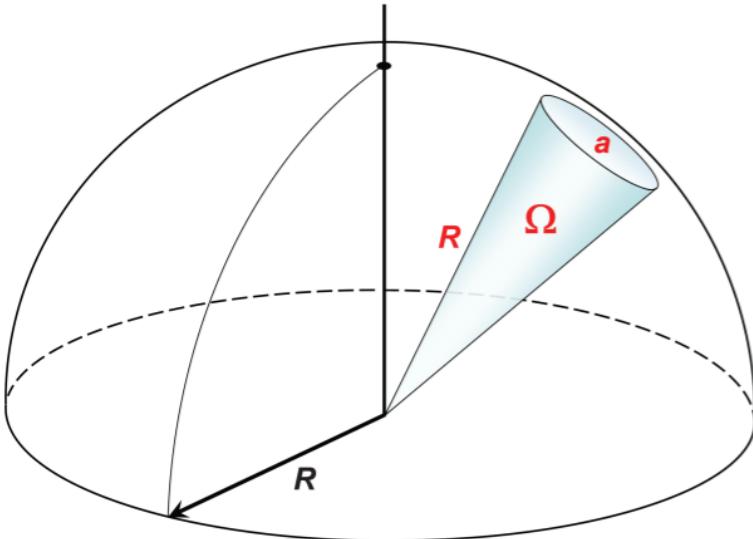
Exercise 1

- Good understanding of T1- and T2-weighting is needed
- Also, how each weighting relates to used TE and TR?
- An excellent resource for MRI: <https://mriquestions.com/index.html>

Exercise 2

- K-space is traversed with gradients → step size is bound to gradient strength and the time step between samples
- Step size and FOV are closely linked
- Follow the instructions for the MATLAB exercises, no coding required (but you can change a couple of values to see what happens)
- An excellent resource for MRI: <https://mriquestions.com/index.html>

Exercise 3



- A) At what angle can light travel inside a (straight & long) optical fiber without loss of energy?
- B)
 - The “signal” is the number of photons detected (note the quantum efficiency)
 - SNRs are quite large