

ADC Phantom Design

I am looking for feedback on the layout, which is meant to characterize off-isocenter performance in addition to measuring a range of ADC values. The idea behind the spokes is to dedicate each spoke to a specific ADC value (same material choice). The intension is to bracket a range of ADC values from $0.5-2.0 \times 10^{-3} \text{ mm}^2/\text{s}$ at room temperature; this will range from about $0.2-1.1 \times 10^{-3} \text{ mm}^2/\text{s}$ in an ice-water bath. The current design is built around 17 mm OD tubes with about 120 mm length, but I am also considering going to a smaller vial size of 5 mL: these would have a 90 mm length, and a 12 mm diameter, and also have an internally threaded cap. This way there would be a higher spatial sampling rate, i.e. more tubes along a given spoke. However, I am concerned that there may not be enough voxels to get a good signal with these smaller tubes; feedback on this issue would be appreciated.



Please send feedback directly to Dr. Michael Boss at: michael.boss@nist.gov

Thank you.