# Japan QIBA (breast)
# –MRI phantom for standardization-

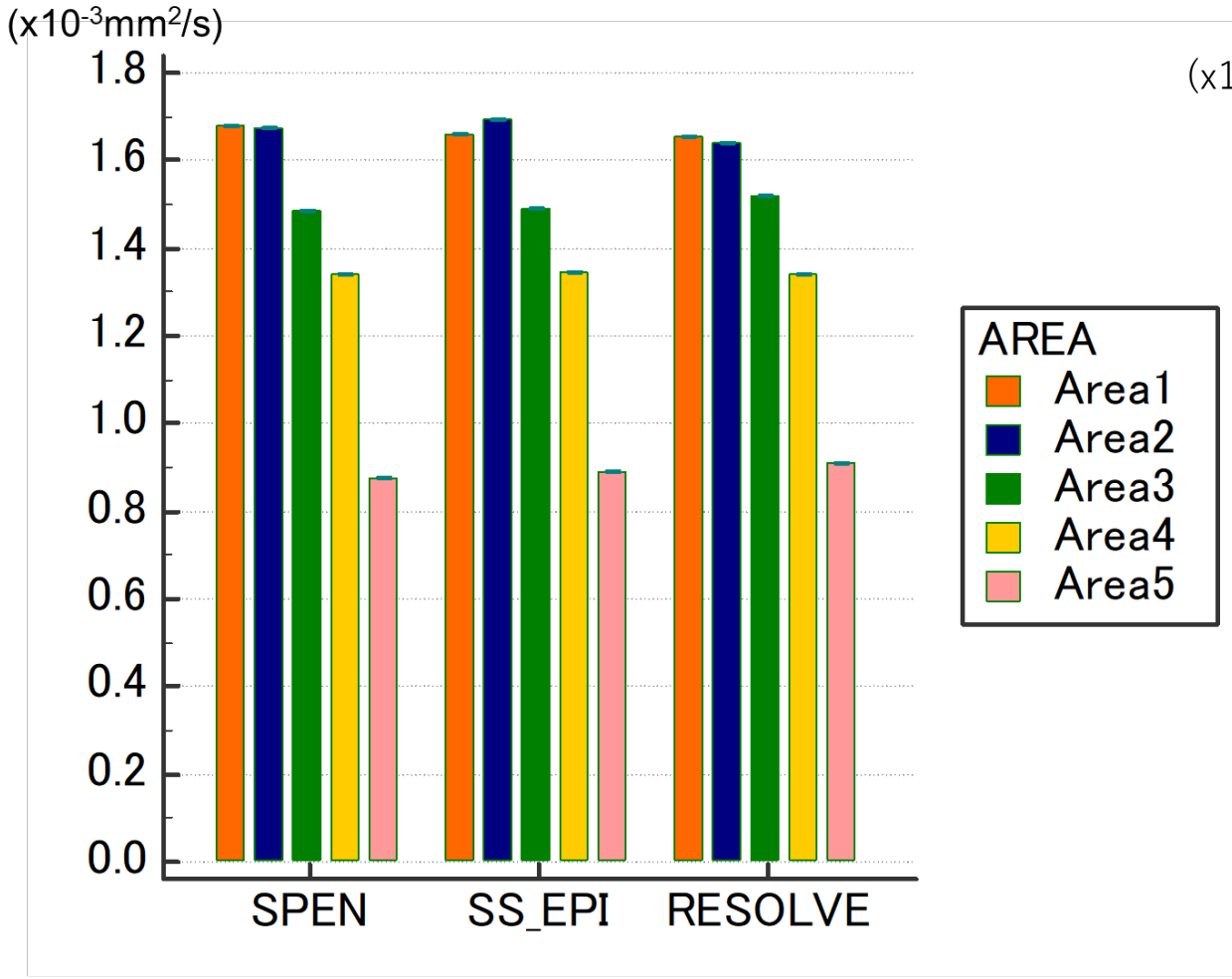
- Universal phantom
- In harmonization/collaboration with QIBA
- Harmonization of acquisition parameters, including DWI

(e.g. TE/TR, b values, diffusion times, spatial resolution) and processing pipelines (direct ADC calculation or monoexponential fitting, Noise Correction Factor could be recommended as a QIBA guideline)

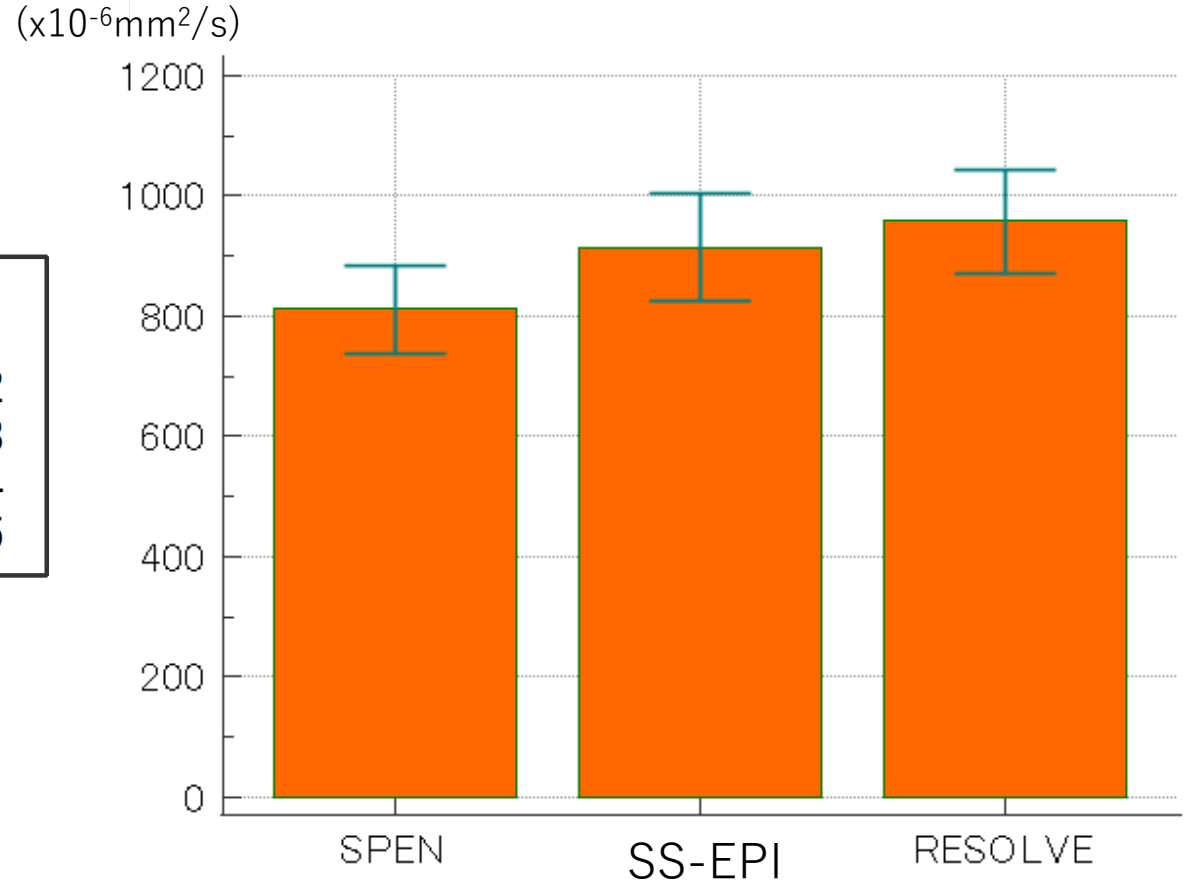
- "DWI readiness quality labels" (like for energy and environment) to MRI scanners (A=excellent, E= poor) : accuracy, precision, repeatability of ADC values
- Temperature corrected
- Issues: non-EPI sequences, different fat-suppression methods

# How the differences arise?

ADC in phantom

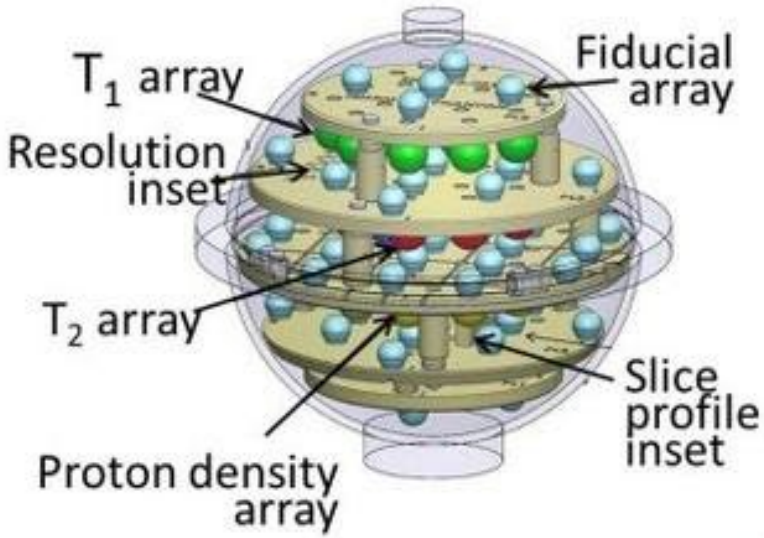



ADC difference in lesions (due to low SNR? sensitivity to residual fat? Voxel heterogeneities? etc)

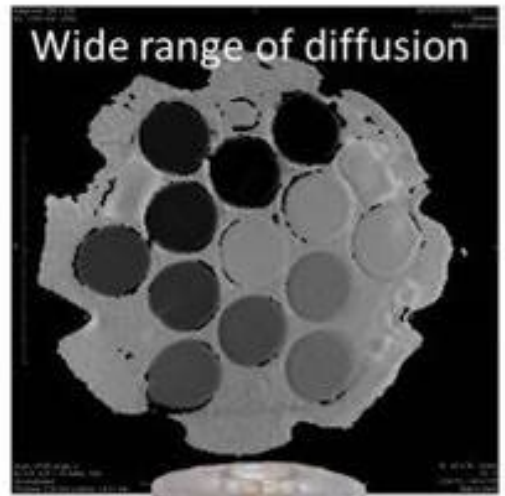


**Quantitative Diffusion (ADC) may allow to evaluate response to chemotherapy within the first day of treatment**
**→accurate diffusion measurements are required**

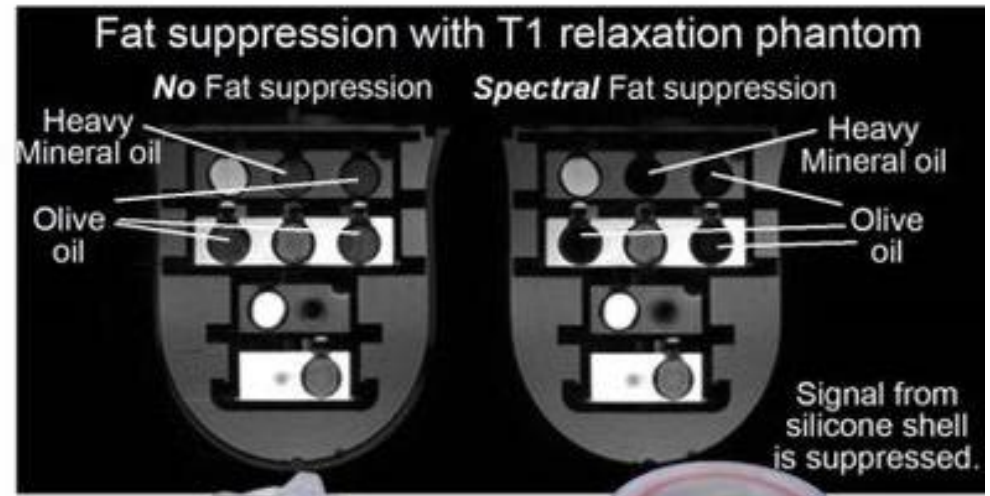
NIST/ISMRM system phantom




NIST/RSNA/NCI diffusion phantom




NIST/UCSF/NCI system phantom




https://www.nist.gov/programs-projects/quantitative-mri