

## Aim

❖ We investigated the performance of the Fast tomographic Reconstruction (FTR) software for small-animal PET detectors of SAFIR-I and SAFIR-II in terms of :

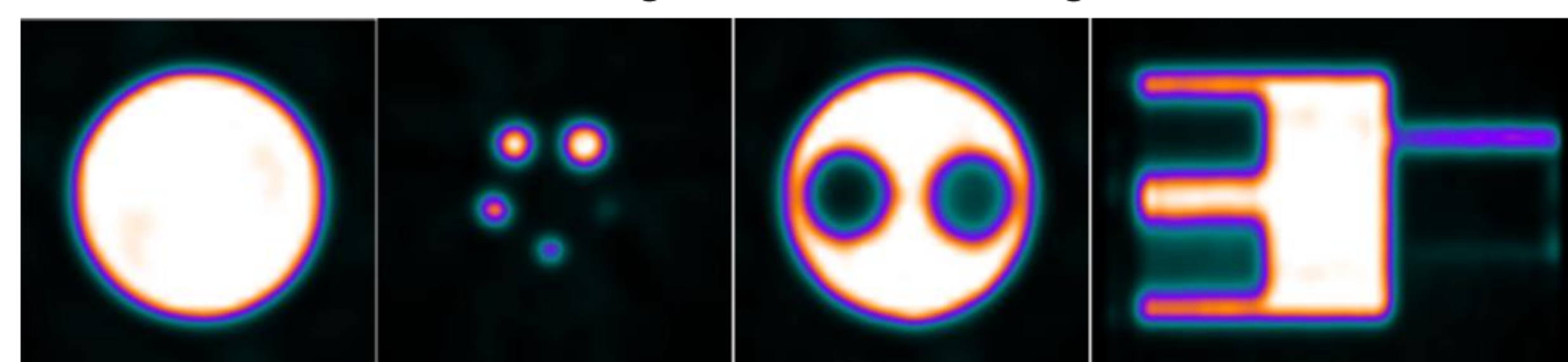
- Image quality : NEMA NU4-2008 standards
- Reconstruction time : on a single thread

❖ NEMA and spatial resolution analysis were compared to STIR software with the same reconstruction parameters.

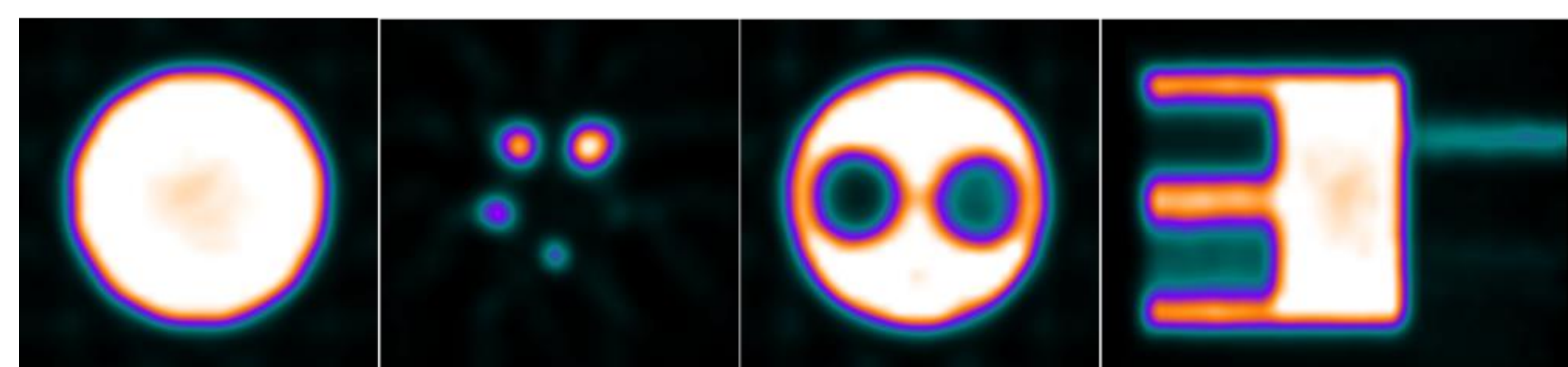
## Results

Image quality phantom : SAFIR-I

**FTR (7.9 min)**

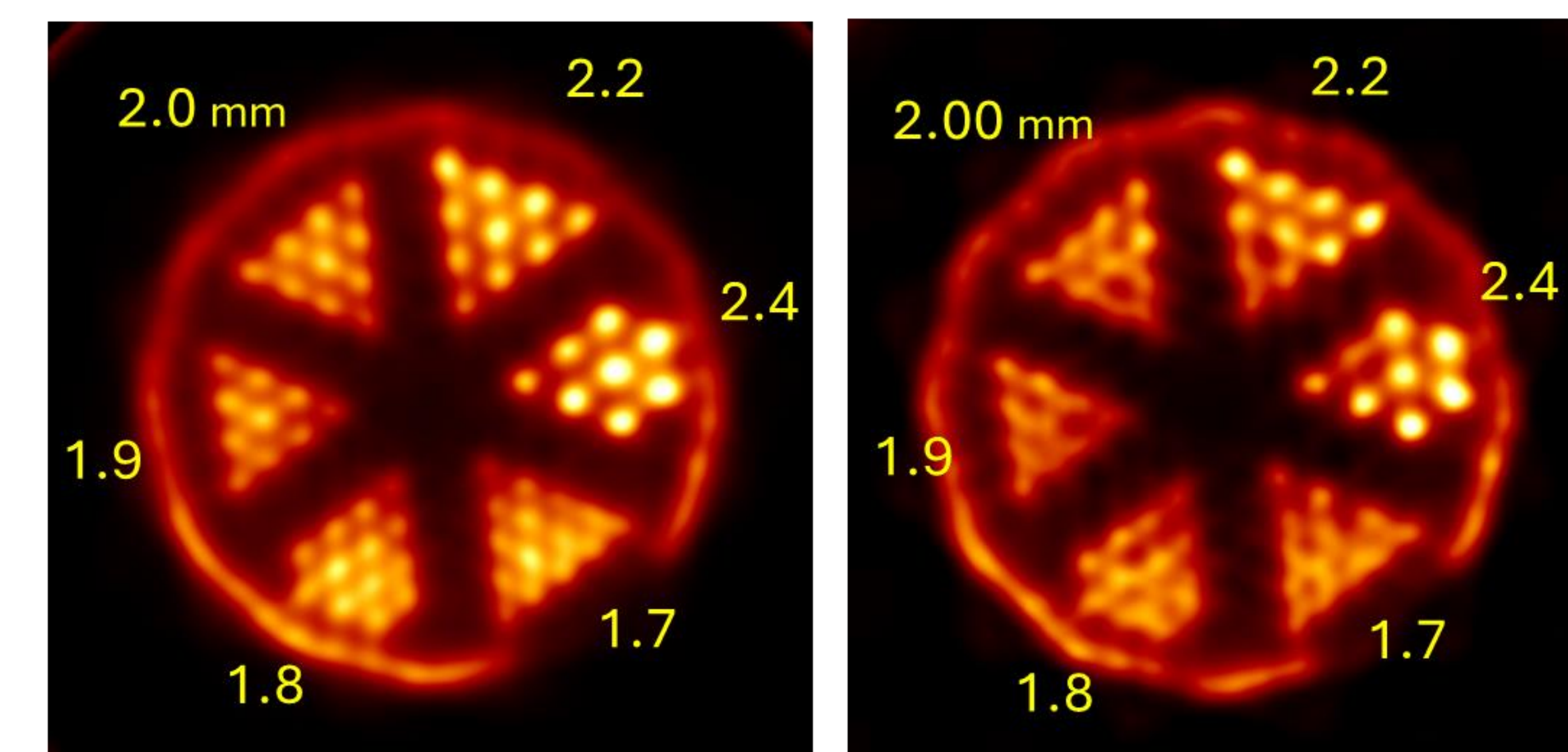


**STIR (10.1 min)**



Derenzo phantom : SAFIR-II

**FTR (46.8 min) STIR (128.3 min)**



## Summary

- According to NEMA characteristics, FTR demonstrated improved values for uniformity, recovery coefficients, and spill-over-ratios, compared to STIR.
- FTR provided a better performance in clear resolving of all hot rods in the Derenzo phantom.
- FTR reduced the reconstruction time by 22% and 274% in SAFIR-I and SAFIR-II, respectively, compared to STIR.
- In conclusion, FTR can accelerate the accurate image reconstruction for SAFIR scanners, particularly for SAFIR-II.