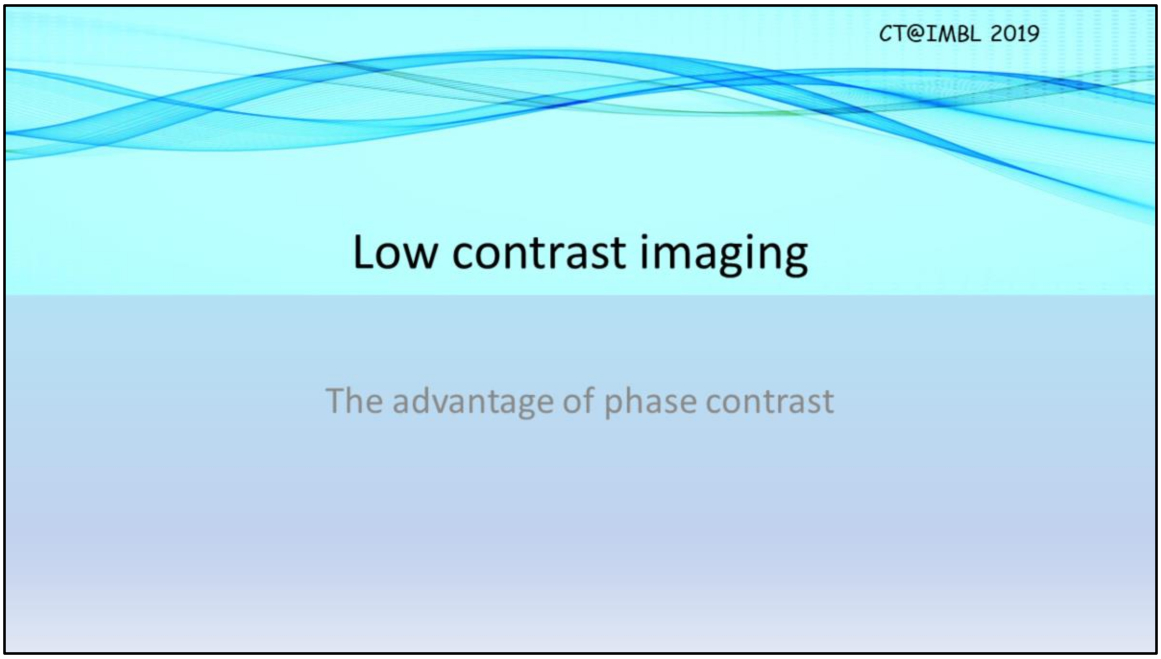
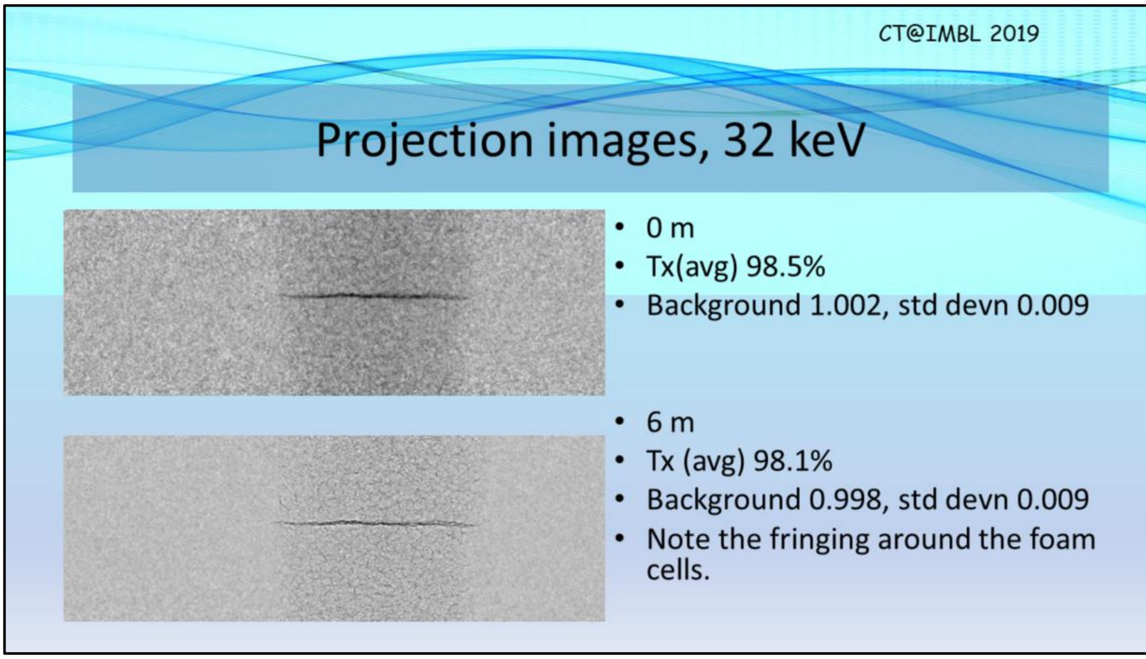
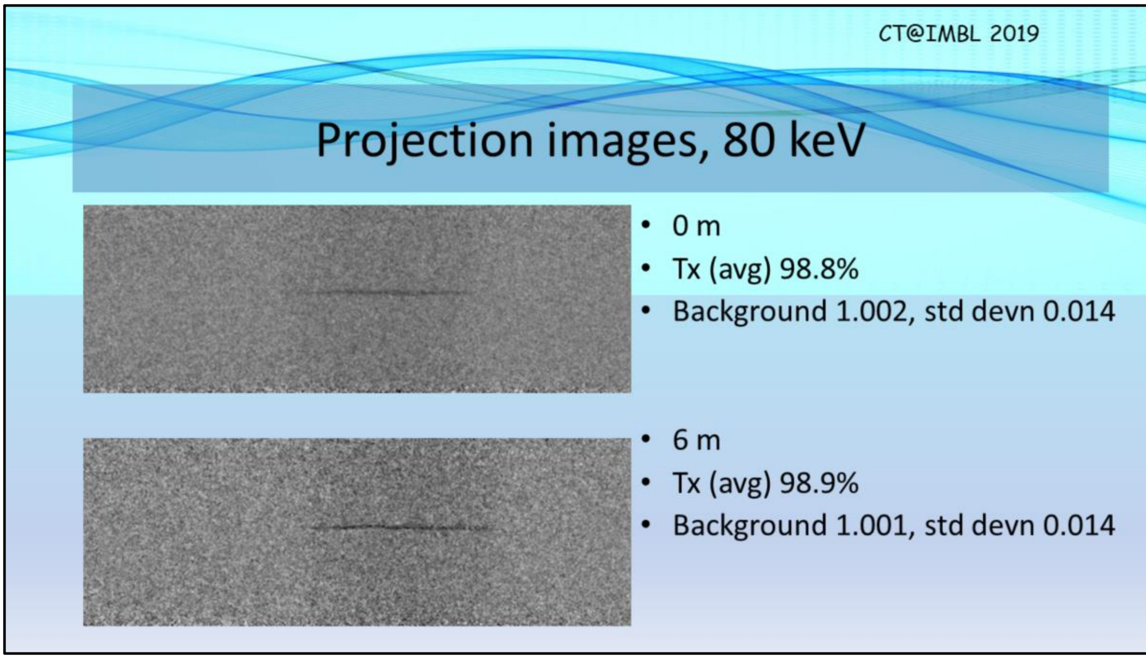


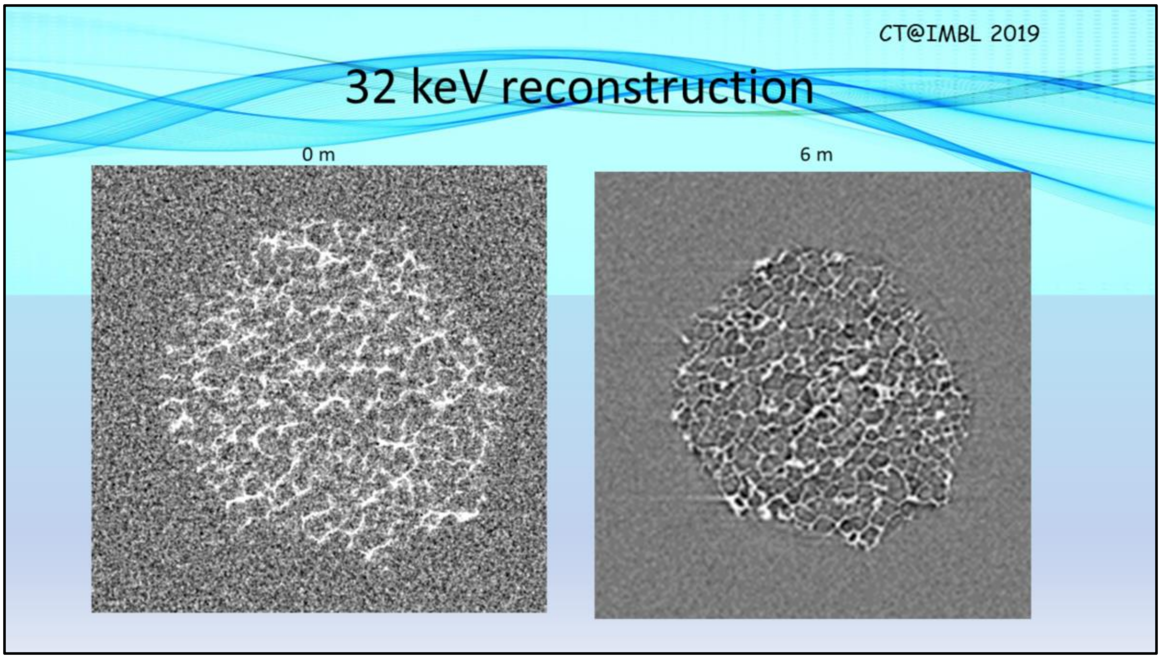
- A very quick illustration of the advantages of x-ray phase contrast CT



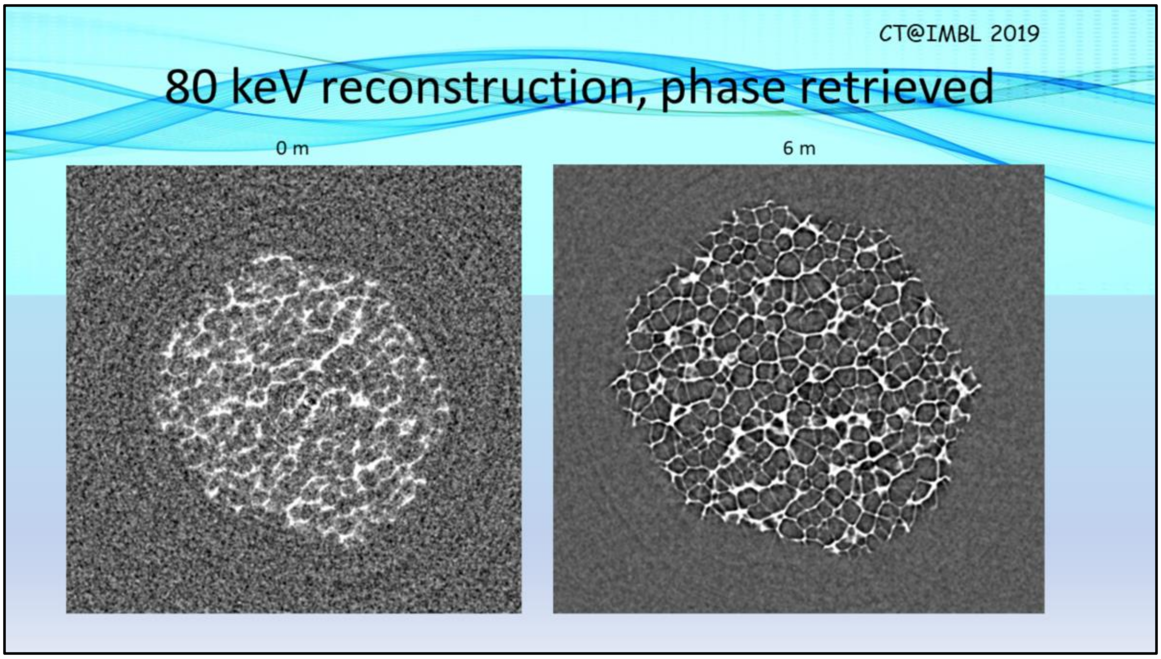
- These are projection images of a small (20 mm cubed) piece of plastic packing foam.
- The darker line across the middle is where two pieces are glued together.
- At 32 keV the foam is almost transparent. Only 1.5% of the x-rays are absorbed.
- These images have been calibrated using ‘flat and dark’ correction. Each pixel gives the transparency of the object compared to air.
- As illustrated in Andrew’s talk on phase contrast. By moving the detector back by 6 metres the effect of phase shifts can be seen.



- Increasing the beam energy to 80 keV the transparency of the foam goes up. Itnow only absorbs 1.2% of the photons.
- It’s almost invisible in the projection images.



- Running a CT reconstruction on this data set produces a very noisy image when using the data set with no phase contrast.
- The same reconstruction on the 6 metre distant data set gives much better results.
- Note; These reconstructions was made without attempting ‘phase retrieval’. So the edge enhancement in the foam cells is purely from the physics.



- Using phase retrieval has little effect on the data with no phase contrast.
- There is a low pass filtering enhancement of the signal to noise ratio, but nothing else.
- On the other hand the 6 metre set with phase contrast looks good. Even with such a low transparency.