Diagnostic Medical Image Processing (DMIP)
WS 2014/15
Marco Bögel, Room 09.155   marco.boegel@fau.de
Yan Xia, Room 09.157   yan.xia@cs.fau.de

Exercise 5: Sinograms and Filtered Backprojection (FBP) for Parallel Beam

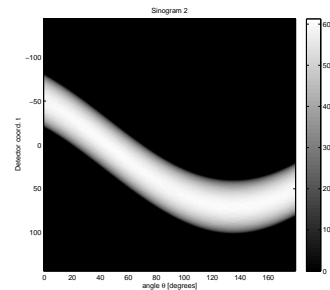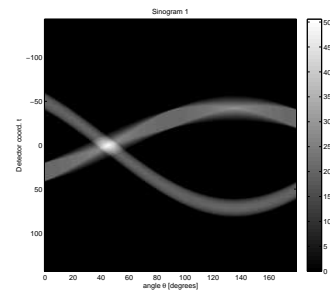LEHRSTUHL FÜR
MUSTER-
ERKENNUNG

1 Sinograms

What is a sinogram?

_____

_____

Hereafter you can see some sinograms of different images. Motivate which types of input images produce such sinograms.
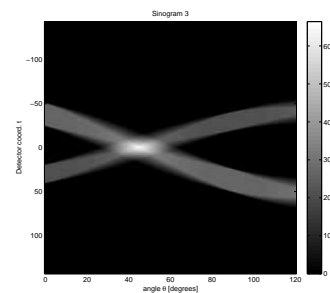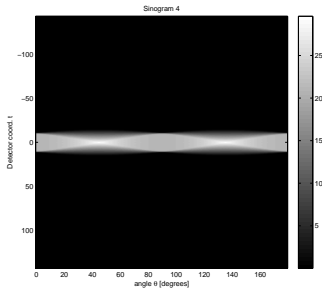

_____

_____

_____

_____

_____

_____

_____

_____

_____

Sinogram 4

2   Filtered Backprojection (FBP) for parallel beam

What is the maximal angle that makes sense to acquire projections?

Which artifacts appear if we have a too small number of projections?

What type of artifacts appear if the projections are truncated?

For the Filtered Backprojection we can use different filter kernels. List them!

Now you should complete the gaps in *exercise5.m* implementing a CT scan and reconstruction. First start without filter kernels. Then implement the two most known filter kernels! Show a plot where you can compare the different kernels.

Some useful matlab functions: radon, iradon, imrotate