

Explanation of thresholds :

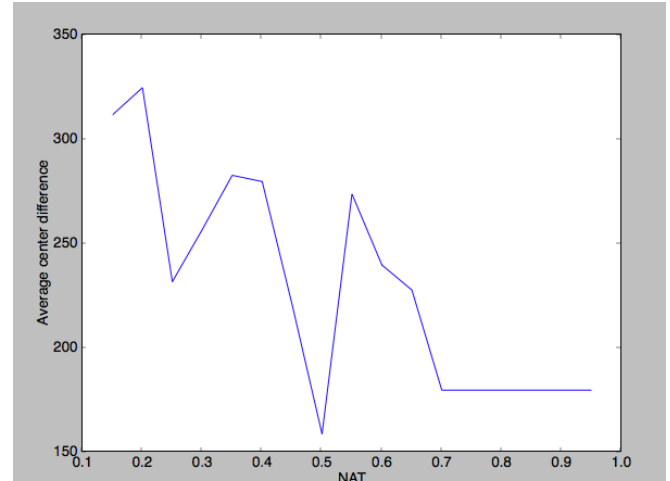
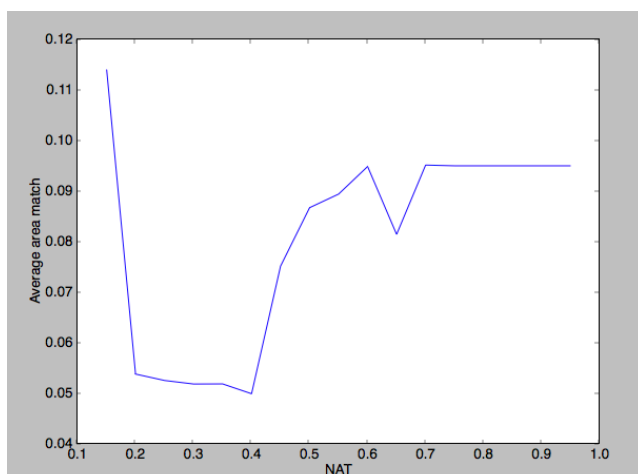
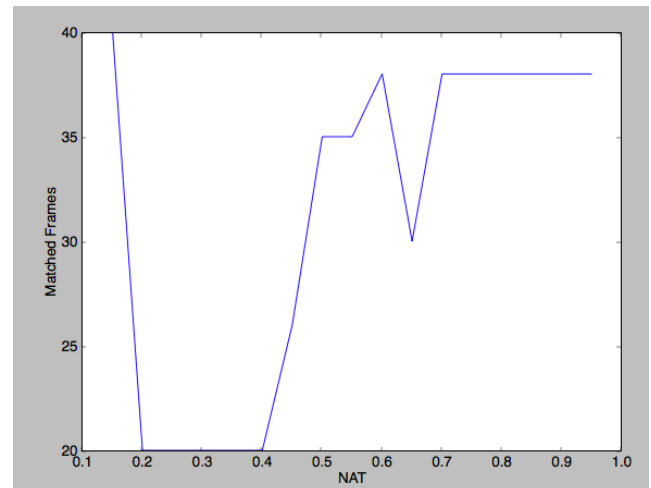
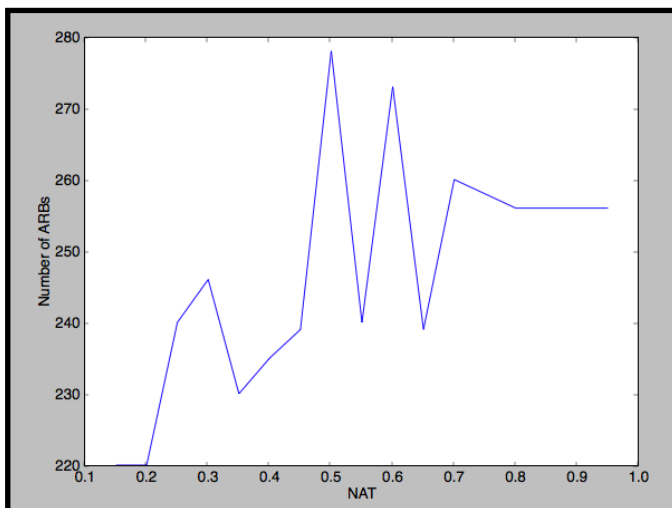
- Stimulation Threshold (ST) : If the smallest distance between a appearance in the network and the new appearance is less than the ST, then no new ARB is created. (It is counted as being the same as an appearance which is already in the network.) (Note : The closest ARB's resource level is always increased.) Setting this to 0 effectively turns off this threshold.
- Network Affiliation Threshold (NAT) : If the distance between an ARB and the new ARB is less than the NAT (and greater than ST), then a link between them is created.
- Object Threshold (OT) : If all distances, to the new appearance, are below this threshold (and greater than NAT) a new ARB with no links is created. If the distance is above the OT, then the object is not within the frame and no new ARB is created. Setting this threshold to 1 effectively turns off this threshold.

Note :

- Only using the NAT is the closest method to that described in the AIS paper. But higher accuracy is achieved when using the OT and ST, so I have included graphs for these too.
- In the graphs below there are lots of ARBs, I probably have the decay rate too high. (Also meant it took a very long time to run.) The decay rate has a large effect on the network.
- The graph discussed, showing the number of ARBs, has a black border. The other graphs show stuff to do with accuracy. The threshold values are changed by steps of 0.05.
- Tracking run on the Tiger1 video from <https://sites.google.com/site/trackerbenchmark/benchmarks/v10>. I will run on other videos, once we have discussed what thresholds (combination of thresholds) we should be using?

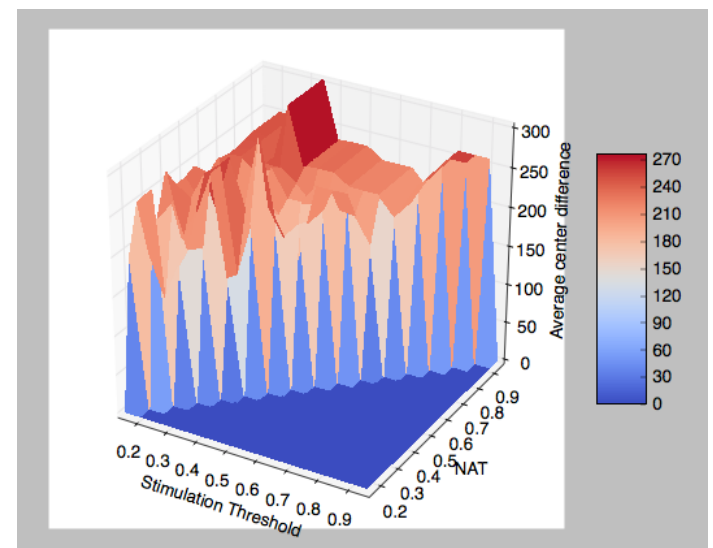
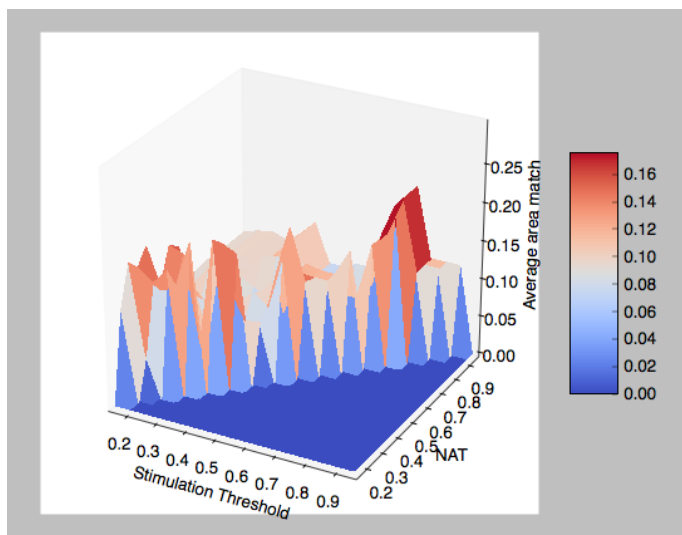
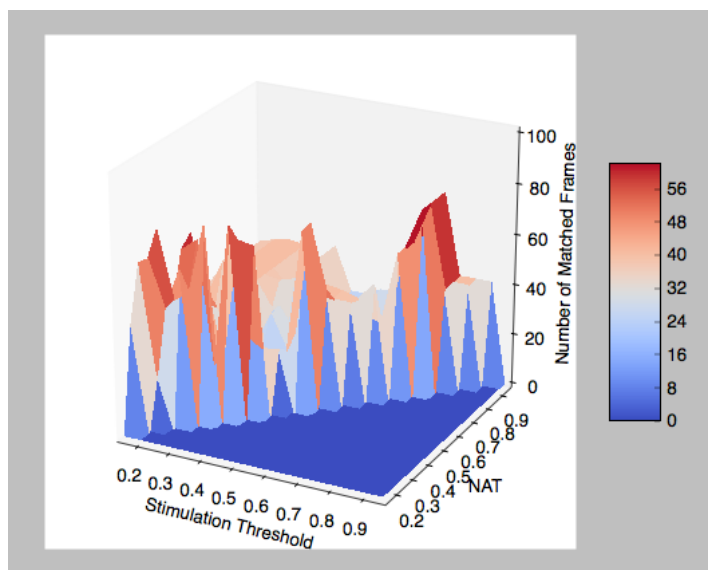
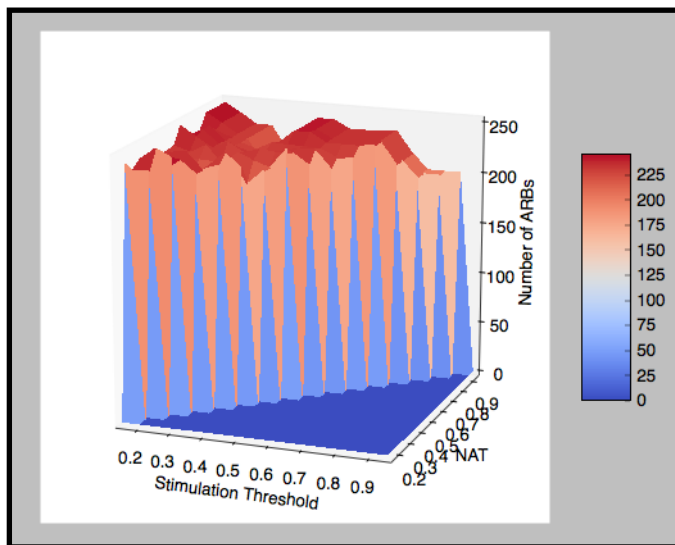
Changing NAT only :

I don't get the a particularly nice curvy graph you mentioned (and is in the AIS paper) (for showing the number of ARBs, graph at top left). Maybe I'm doing something wrong? (Might also be related to lots of ARBs being created, and the network sometimes does not have time to stabilise during the length of the video?)



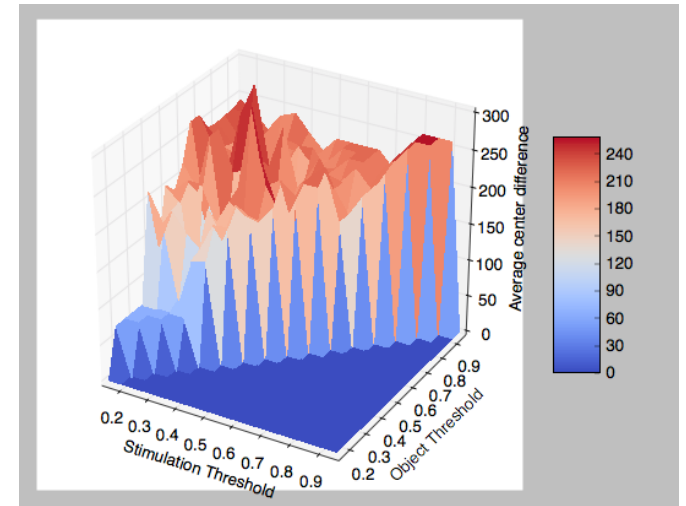
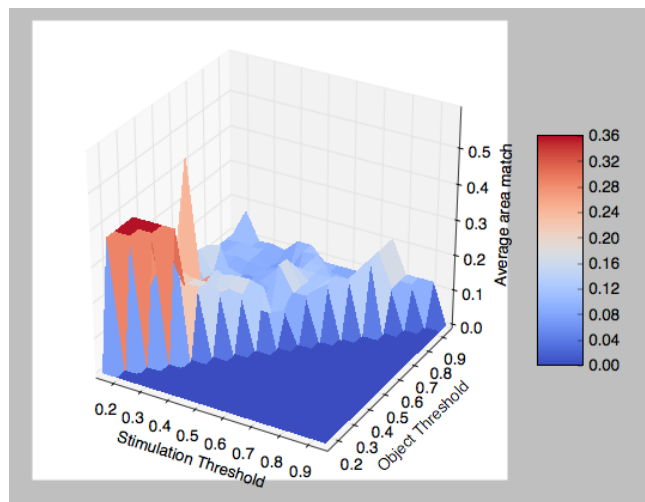
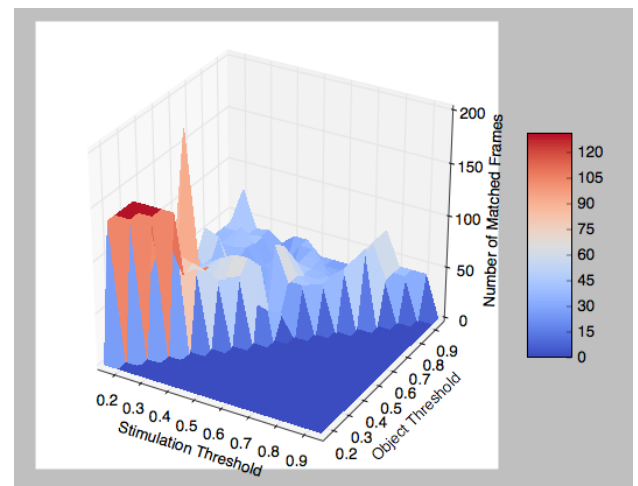
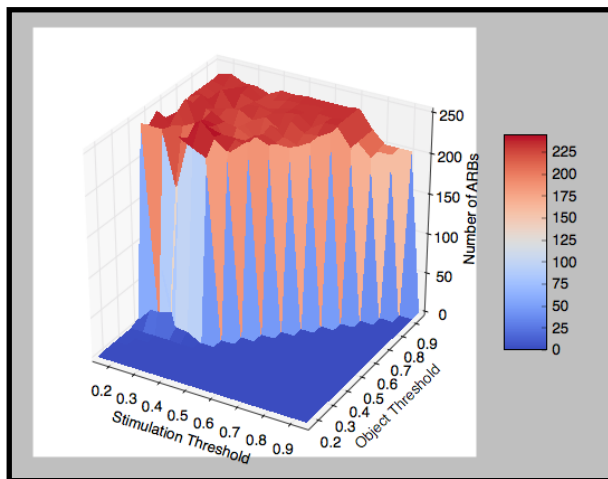
Changing NAT and OT :

Should mean that when the object is occluded (or not within the frame) no new ARB is created.



Changing ST and OT (the NAT is directly in the middle of ST and OT):

The accuracy appears to be high for one particular point, seems a little random.



Within one result (one run of the tracking) :

It does create lots of ARBs at the start of the network and then start to stabilise.

