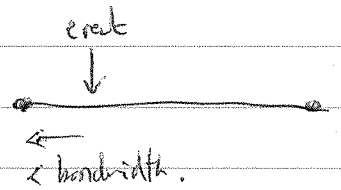
NETWORKS

Comments on Okabe

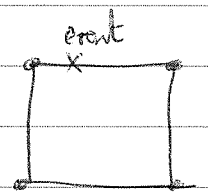
Section 4 is the important part. It's important to realize that they ban cycles below twice the bandwidth.

Problem: • Don't consider edge effects. What do you do about this.

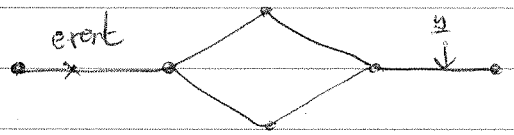


This would seem to affect KDE on an interval.

• They claim that the cycle case follows similarly, but I don't see this. What about.



How do you deal with overlap?



Do you go around and around the cycle?
The kernel value at y would appear to be under-estimated.

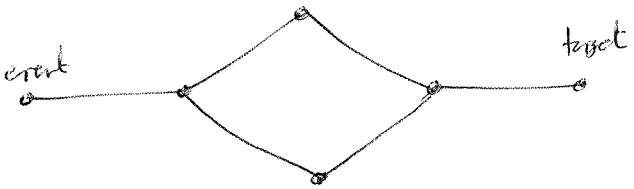
If we have normalisation (23 in their paper) and symmetry (21) then "unbiased" follows.

The more I think about it, the more "unbiased" seems like a bad property to prioritise. Because you can easily make an unbiased estimator by taking an approximation to a point mass. For applications we are also interested in smoothing.

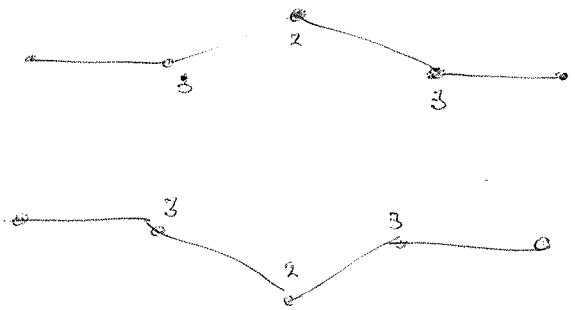
THOUGHTS

- Surely we need to take account of real world distances, not just "graph distance".
  - But perhaps we could "grid" the network. You don't need nodes at corners, only at intersections.
  - I still think ~~you~~ you'd end up with either inconsistent edge lengths, or a vast number of edges...
- Surely we do need to take account of node degree.

EDGE effects

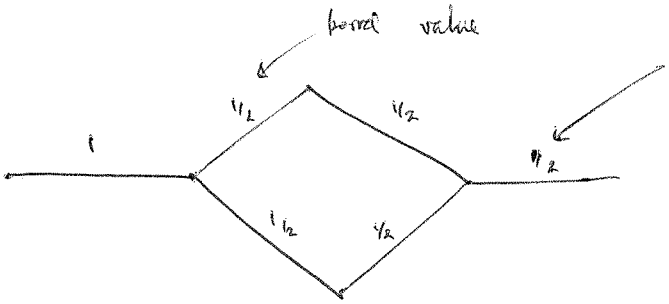


Two paths



Weight: $\frac{1}{1} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$ in both cases.

Suppose we have a uniform kernel.



$\sqsubset$ 2 paths each with weight $\frac{1}{4}$.