

# Five Minute Siesta

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**Partners in Crime:**

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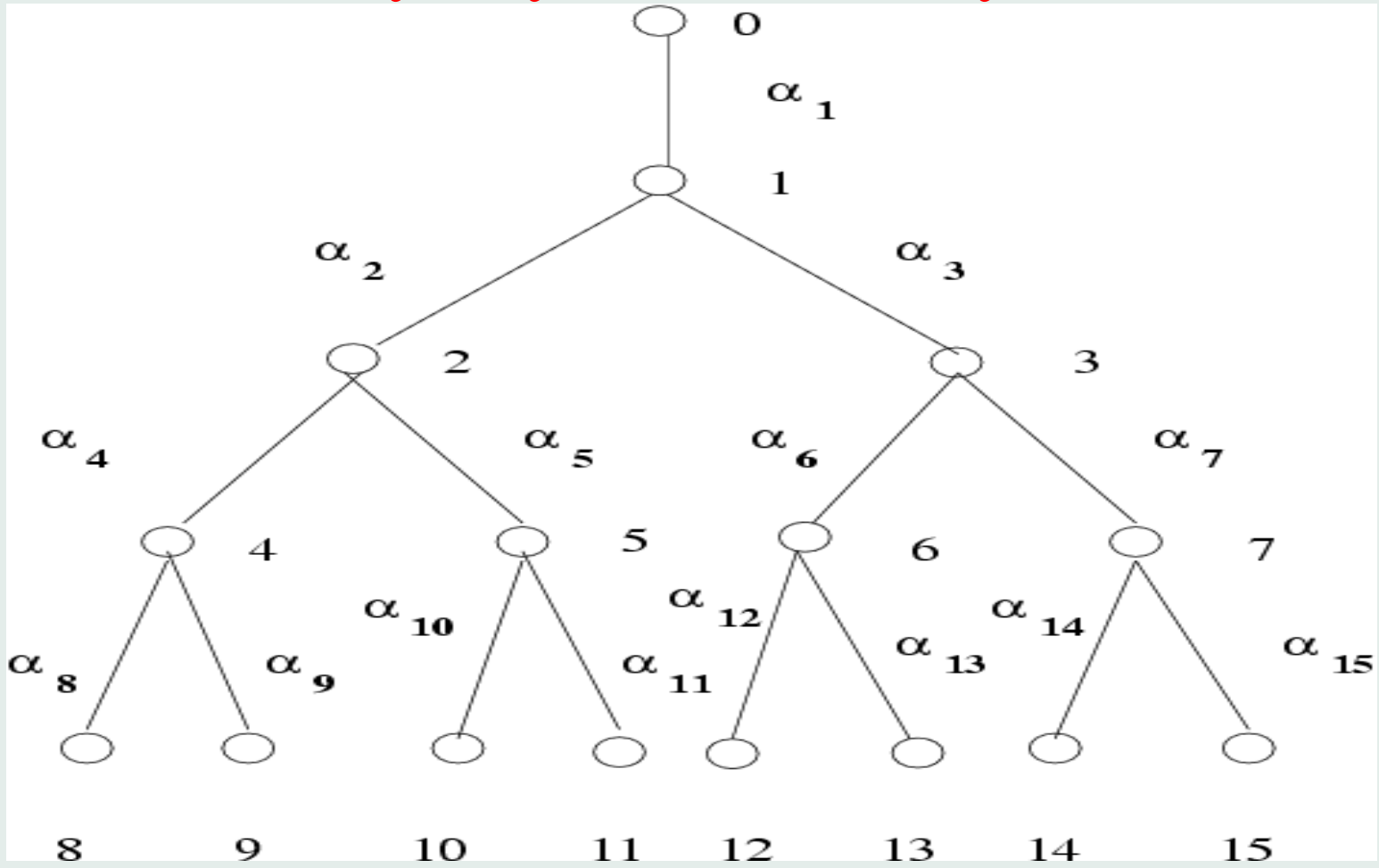
# Current work on Active Network Tomography

- Estimating Loss Rates and Delay Distributions
- New Class of Active Probing Experiments
- Necessary and Sufficient Conditions for Identifiability
- Fast Least-Squares Algorithms for Estimating and Monitoring Loss Rates
- Network Monitoring: Change-Point Detection and Diagnosis

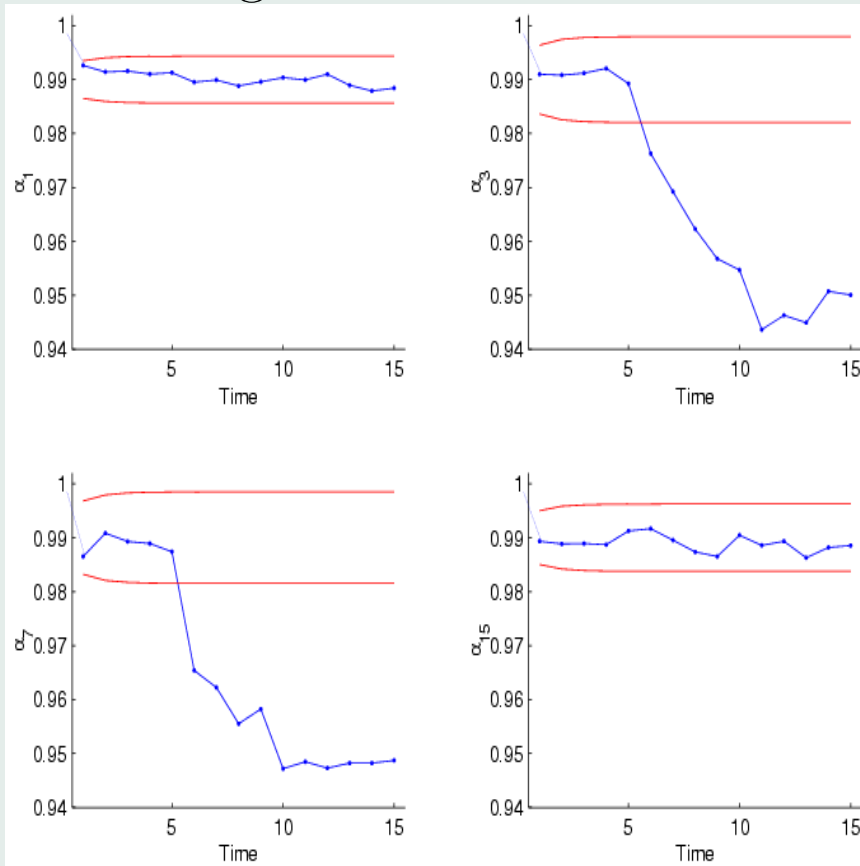
## References

- Xi, B., Michailidis, G. and Nair, V.N. (2003), Estimating network internal losses using a new class of probing experiments, Technical Report, University of Michigan (submitted).
- Michailidis, G., Nair, V.N. and Xi, B. (2003), Fast Least-Squares Based Algorithms for Estimating and Monitoring Network Losses with Active Network Tomography, (preprint).
- Lawrence, E., Michailidis, G. and Nair, V.N. (2003), Inference for network delay distributions with bicast probing experiments, (preprint)
- Michailidis, G., Nair, V.N., and Wang, J. (2003), Techniques for Monitoring and Localizing Network Loss Rates, (preprint).

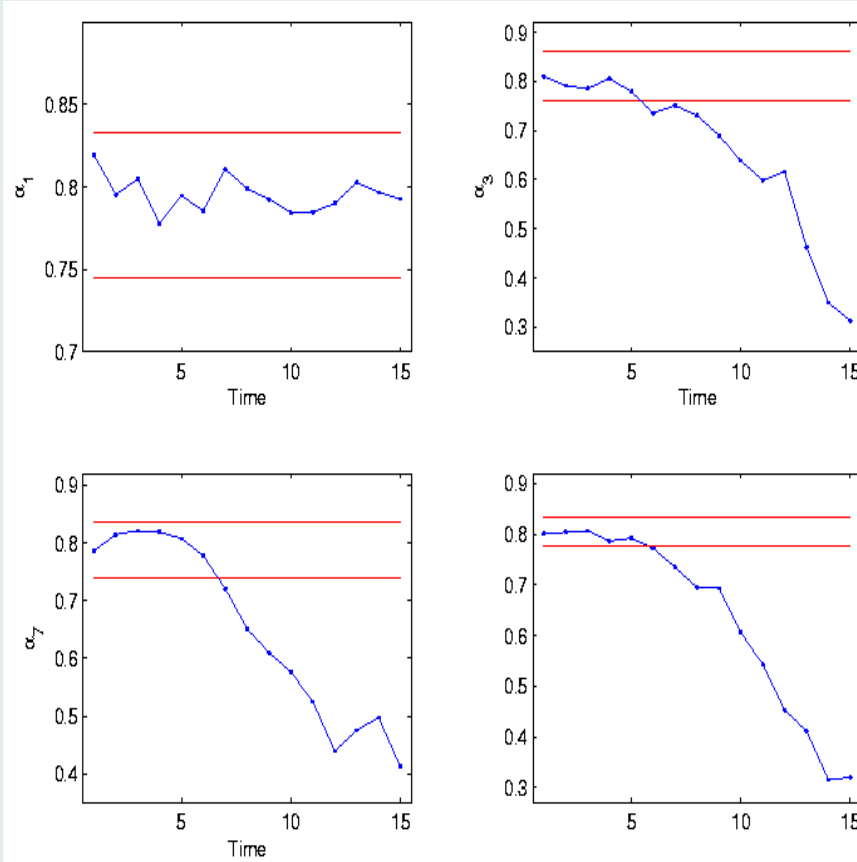
# Four-layer symmetric binary tree



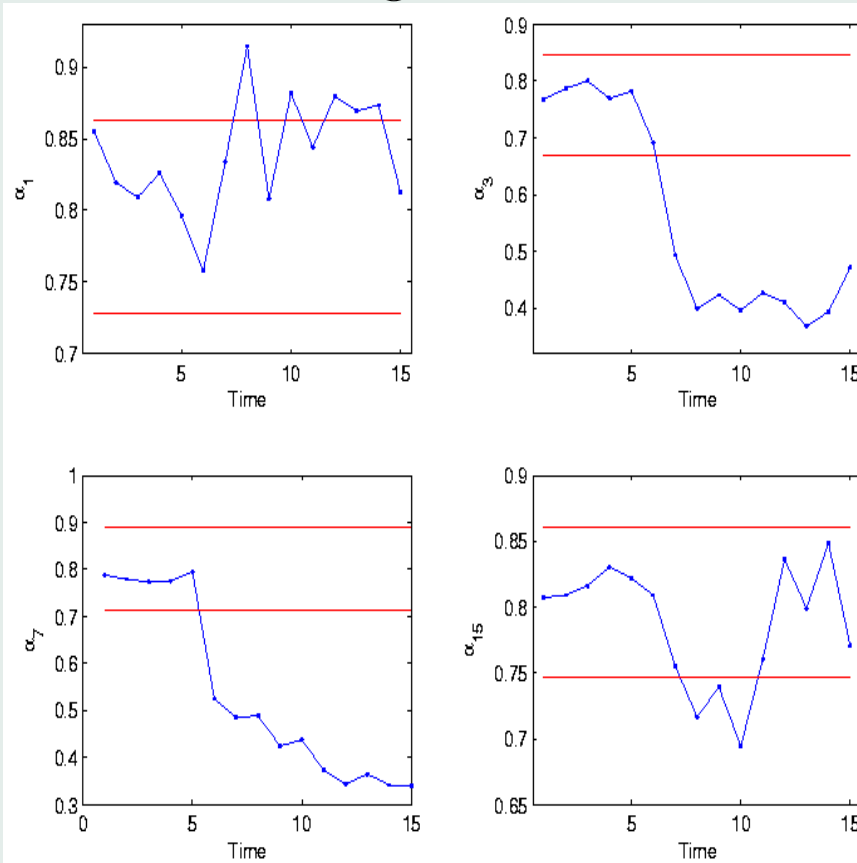
# EWMA Charts for Detection Small degradation on some links



# Gradual change on some links.



# Sudden change on some links.



## Interests/Goals?

- Insights into behavior of data from real networks and collaborations
- Understanding spatio-temporal variation
- Issues in network monitoring
- Learning more about passive monitoring
- Developments in measurement technology and their impact on research questions

