

Gennady Samorodnitsky
Cornell University

I am interested in various approximations to the structure of the system that allow us to better understand and control it.

For example, it is known after Mikosch, Resnick, Rootzen and Stegeman "Is Network Traffic Approximated by Stable Levy Motion or Fractional Brownian Motion?" that over certain scales, after superimposing many independent inputs, the overall input can be approximated by either heavy tailed stable Levy motion, or light tailed but long range dependent Fractional Brownian motion.

Of course, this is only an input into a single node. The load then undergoes service, and moves to other nodes in the network.

Some questions being asked:

What is the output of such a single node?

How do these input and output processes combine and determine the behaviour of a network?