RIPE NCC
RIPE NETWORK COORDINATION CENTRE

There is Gold in that Stream

„Used" RIPE Atlas Traceroutes

dfk - hackathon københavn

RIPE Atlas Terminology

- Measurement =

  - 1 Type (ping, traceroute, DNS, NTP, ….)

  - 1 Target

  - 1 Period (seconds)

  - n Sources (Probes & Anchors)

- Result =

  - result of doing *type* from a specific *source* to the *target* at a specific time

RIPE Atlas Terminology

- **A Measurement produces**

  - probes * 60 / period   results per minute on average

  - exact timing depends on „spread" parameter

- **Example**

  - A traceroute from 30 probes with the (default) period of 15 minutes produces 2 results per minute on average

All Traceroute Stream

- Available to All

- 26k+ results per minute

- ~ 10Mbit/s

- ~7.5 GB /day bzip2 compressed

- delay from traceroute completion

  - 50%/median: 75s

  - 99%:   180s

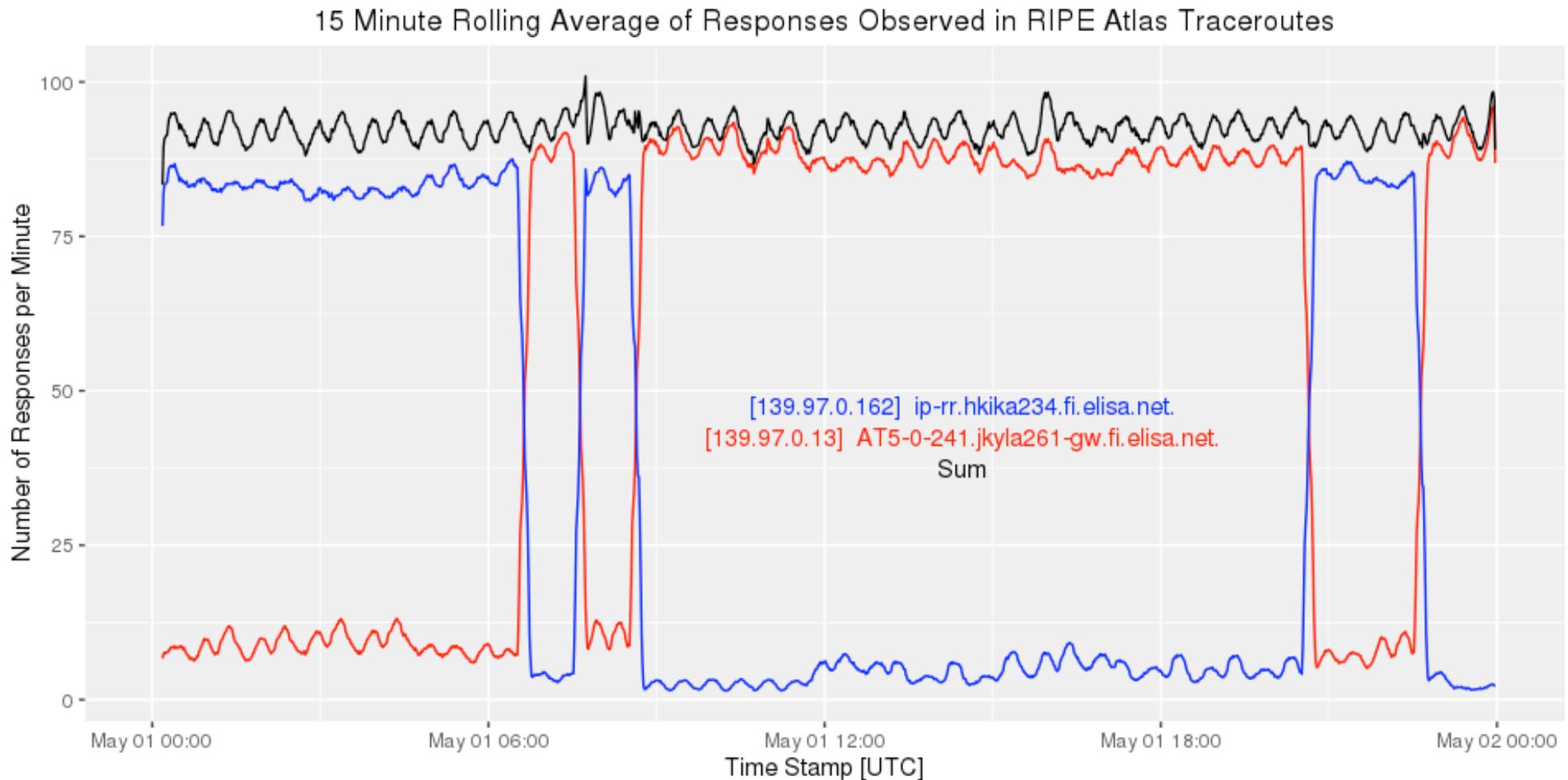- (Near) Real Time Analysis is Possible

All Traceroute Stream

- May 1st 0:00 - 23:59 UTC
  - **500k+** unique IPv4 & IPv6 addresses observed
  - **25k+** seen more than once per minute on average
- primitive sifting already finds major shifts

- **347+ million** adjacencies found that day
- that is a **lot of topology over time**
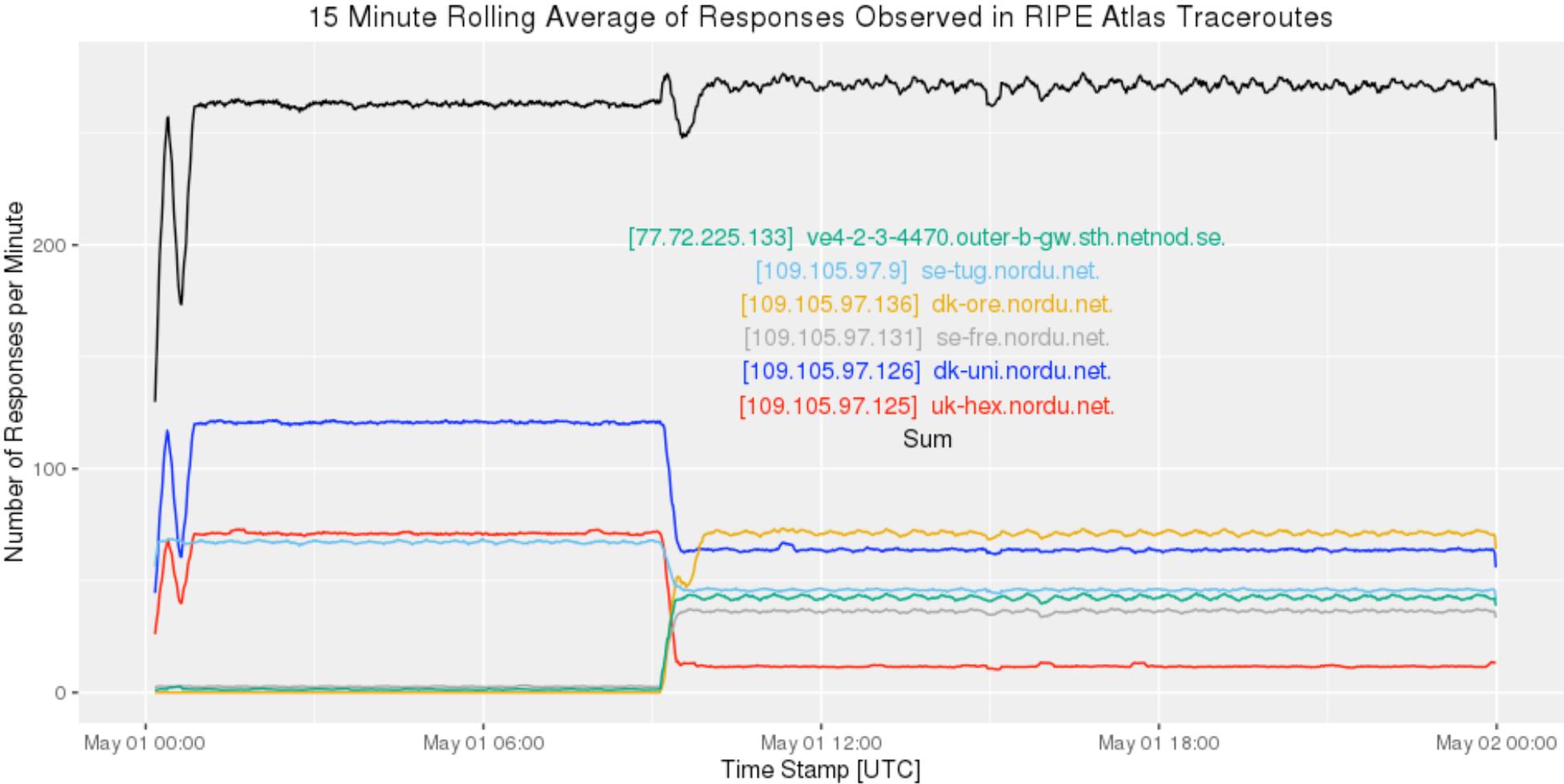- **real packet layer topology**

Path Changes by Counting
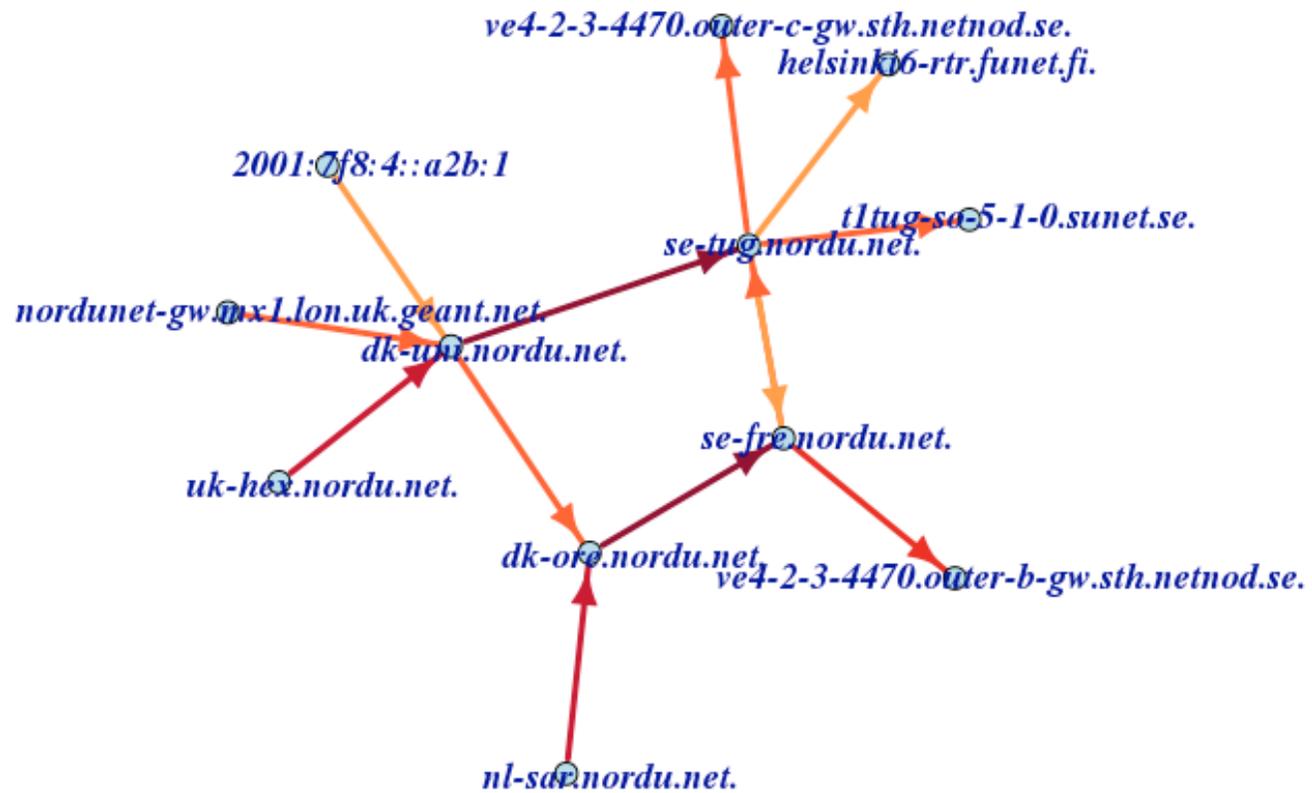
Path Changes found by simple count:

15 Minute Rolling Average of Responses Observed in RIPE Atlas Traceroutes

[139.97.0.162] ip-rr.hkika234.fi.elisa.net.
[139.97.0.13] AT5-0-241.jkyla261-gw.fi.elisa.net.
Sum

Path Changes by Counting

Path Changes found by simple count:

15 Minute Rolling Average of Responses Observed in RIPE Atlas Traceroutes

[77.72.225.133] ve4-2-3-4470.outer-b-gw.sth.netnod.se.
[109.105.97.9] se-tug.nordu.net.
[109.105.97.136] dk-ore.nordu.net.
[109.105.97.131] se-fre.nordu.net.
[109.105.97.126] dk-uni.nordu.net.
[109.105.97.125] uk-hex.nordu.net.
Sum

Local Topology

Available

- RIPE Labs Article

- Real Time Stream (service)

- Hourly Dumps starting mid April (lab)

  - SQL Database of results, updated 1/minute (lab)

- Adjacency Data (lab)

- Code Snippets (lab quality)

  - python (Cousteau, Sagan)

  - R statistics system

Go for the Gold in that Stream