



Zeinab Shmeis  
(EPFL)



Muhammad Abdullah  
(EPFL)



Pavlos Nikolopoulos  
(EPFL)



Katerina Argyraki  
(EPFL)



David Choffnes  
(Northeastern)

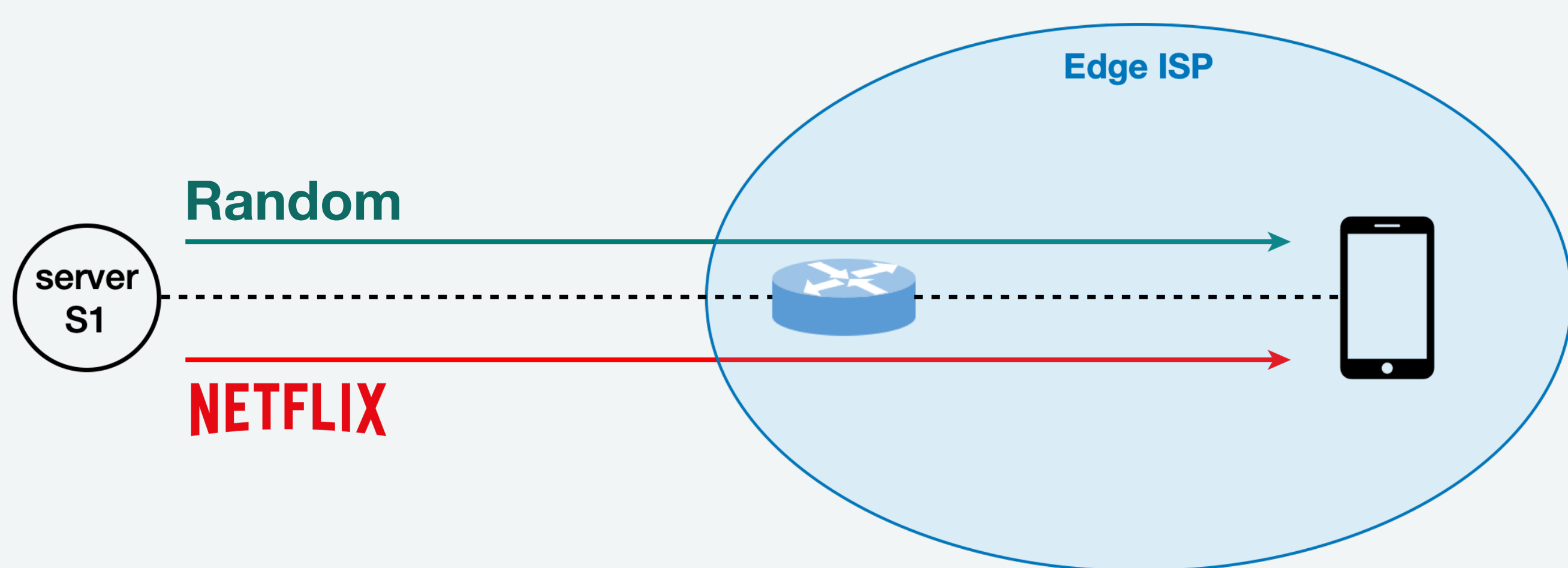


Phillipa Gill  
(Google)

## Can we find evidence whether **an ISP** intentionally give **worse performance** to **specific traffic class**

### Detecting a violation[1]:

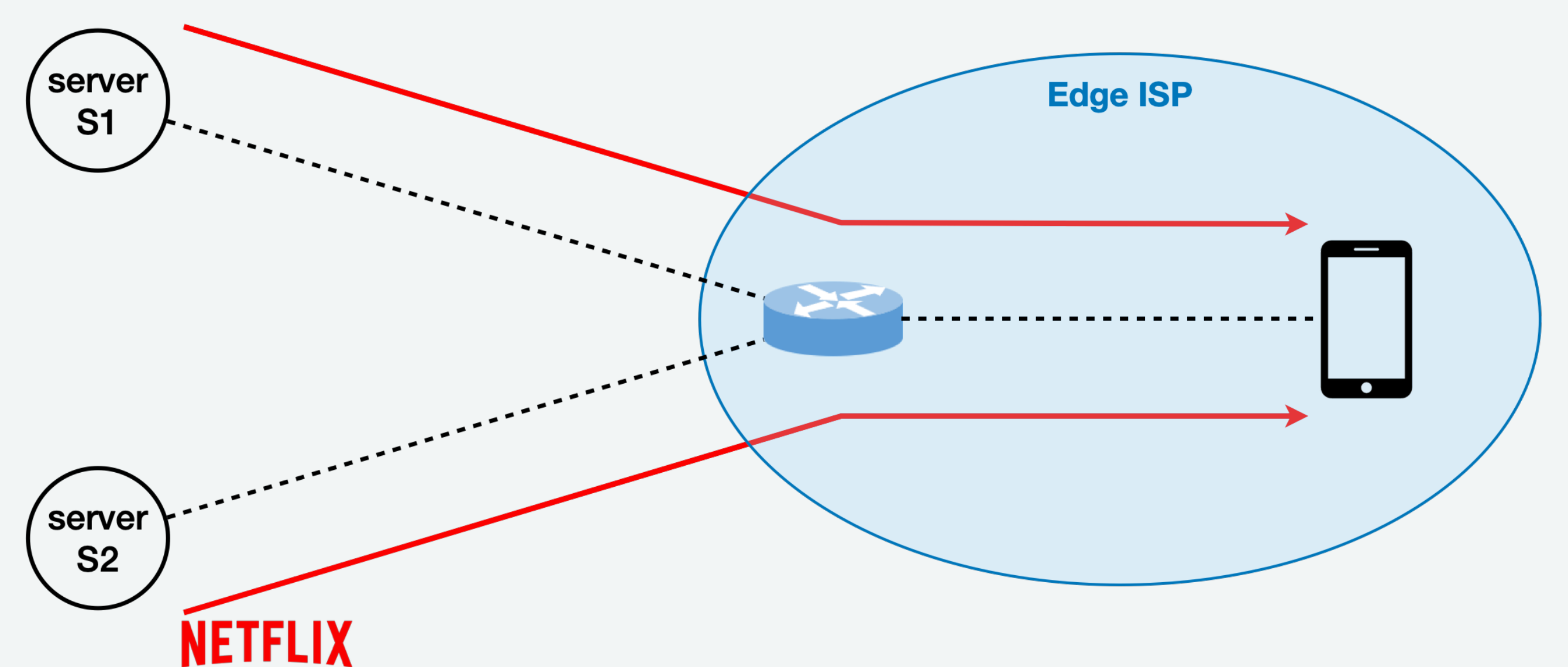
Compare throughput of **Netflix** and **Random** traffic



Single-Path topologies can only **detect** a problem

### Localizing a violation:

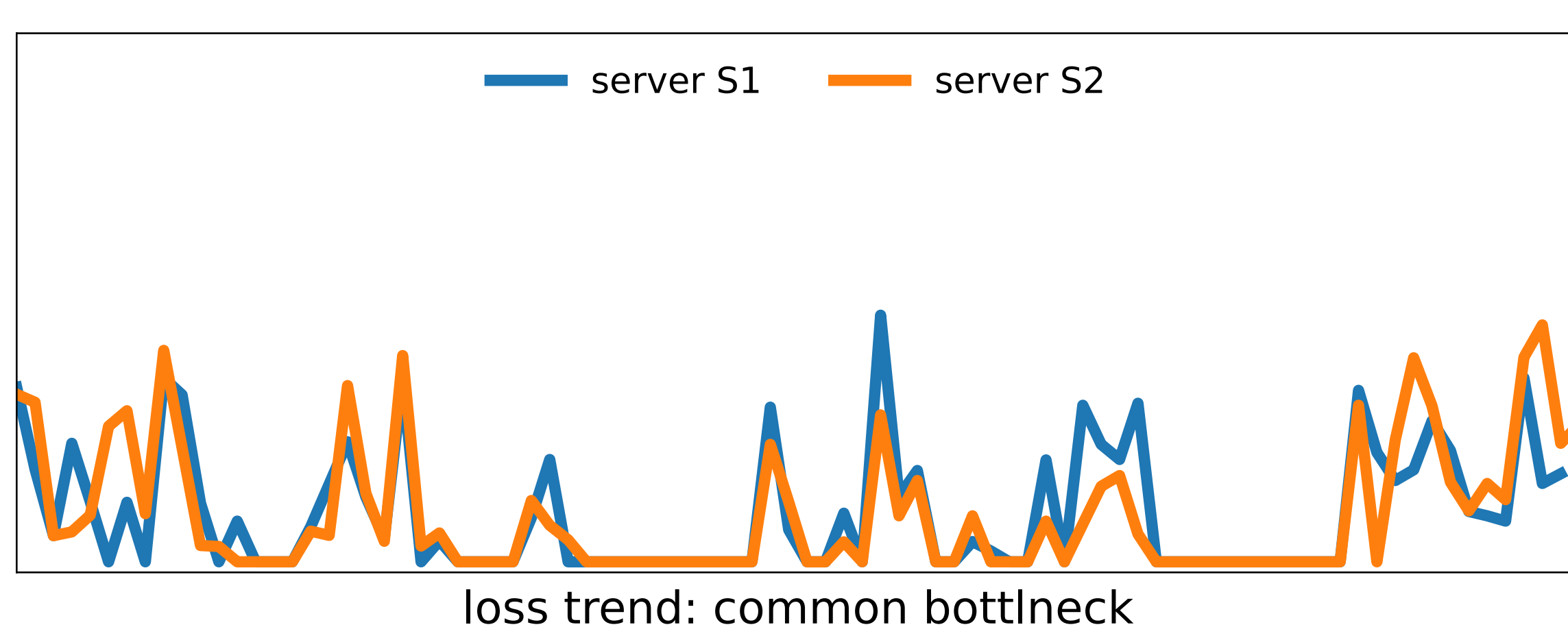
Compare loss trends of **Netflix** traffic along the two path



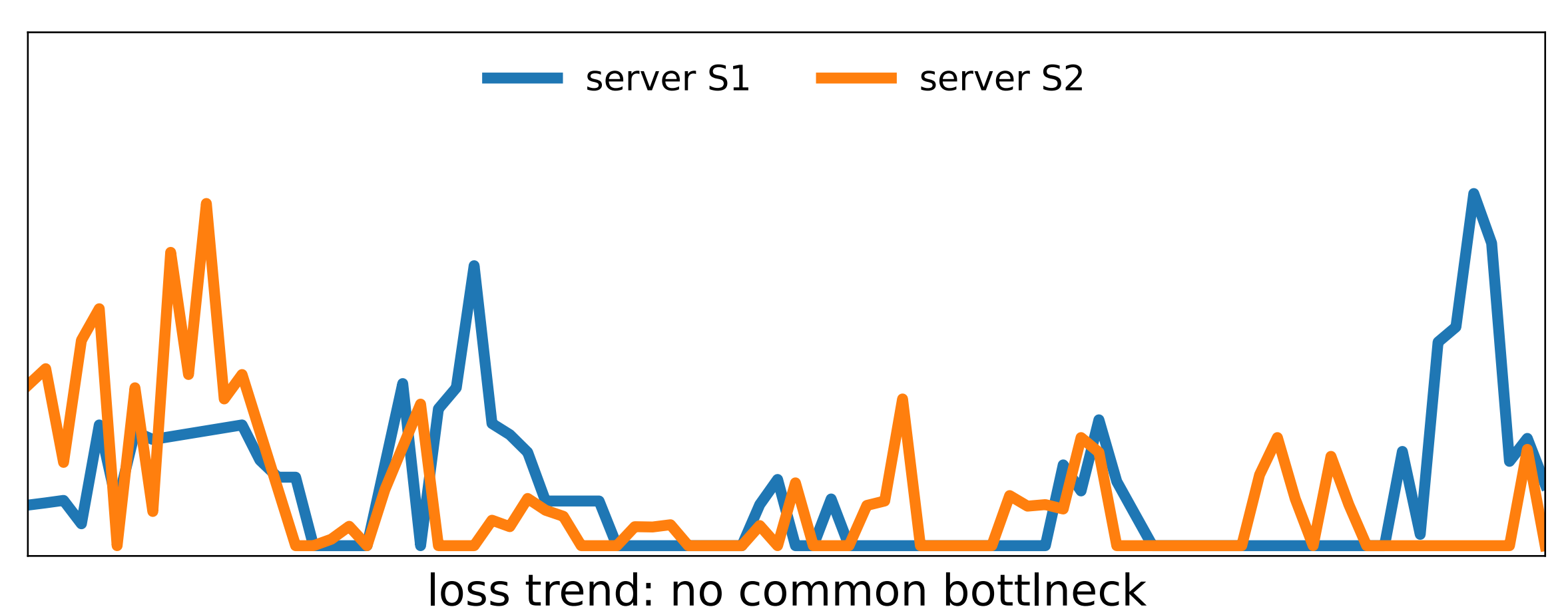
Y-shaped topologies can **localize** a **common** problem

## Key Idea: Find a common bottleneck

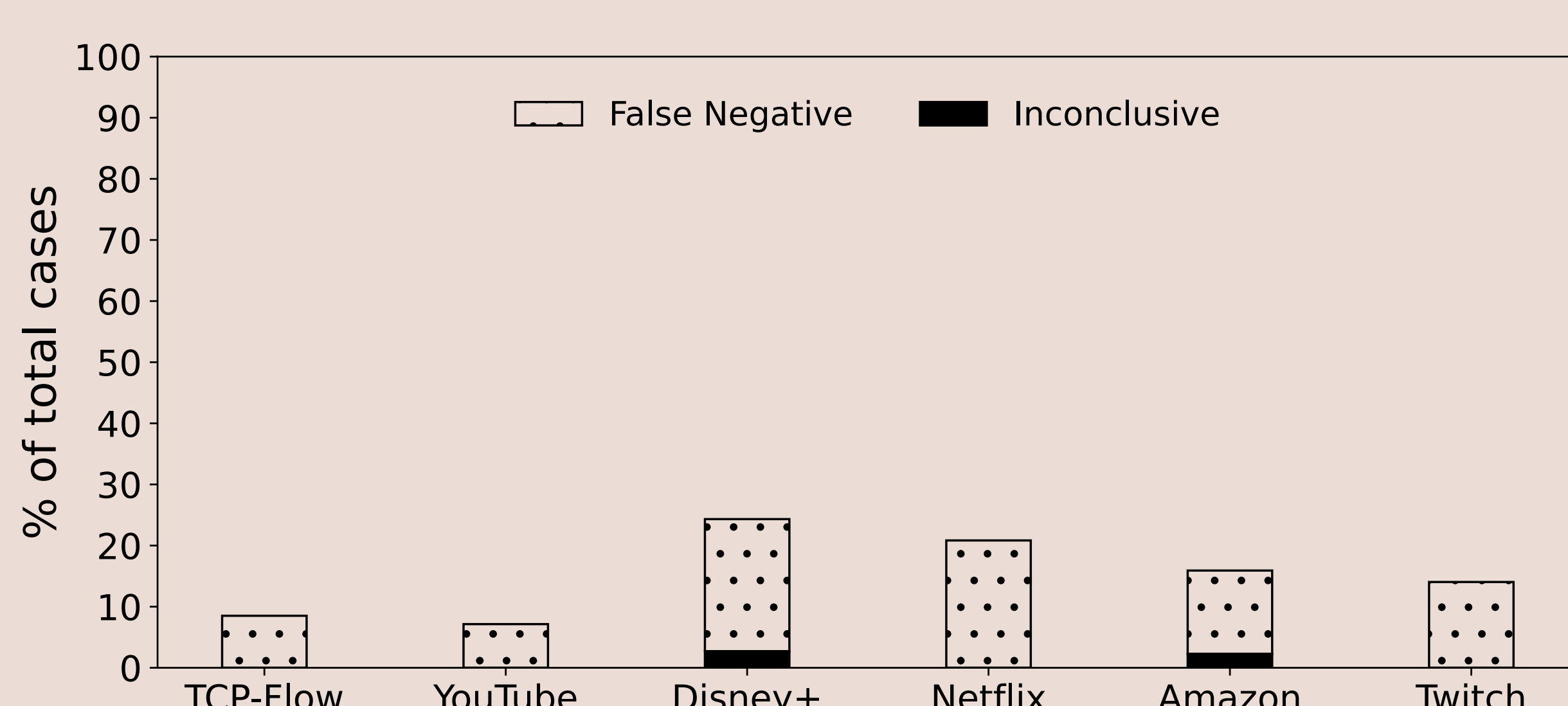
How: Traffic experience correlated loss trends when traversing a common bottleneck



V.S.



## Wide-area testbed results



## Future Directions

Other forms of violations require other statistical methods:

1. Violations that affect delay
2. Violations that affect a single flow
3. Violations that give better performance