**Problem:** In SDN, a controller may not have a consistent view of the data plane leading to:
- Unexpected or wrong paths taken on data plane
- Unexpected or wrong rules matched on data plane

**Causes:** Hardware failures  
Hardware/software bugs  
Attacks  
Misconfigurations

**Consequences:** Security compromise as malicious traffic can attack the network  
Critical traffic can be diverted from the expected path

**Current Tools:** In SDN, control plane tools are insufficient as control plane is not in sync with the data plane  
The data plane tools which rely on tagging do a path-level verification and active probe-generation do a rule-level generation

**Limitations:** Insufficient or unavailable space in the packet  
Active probes or test packets are not representative of production traffic

**Solution Space:** Dedicated header space for tagging  
Tags encoding rule-level and path-level information  
Analysis by comparison of control and data plane related information

**Literature:**

**Contact:** Apoorv Shukla (apoorv@inet.tu-berlin.de)

**Acknowledgements:** This work was supported by Leibniz Prize project funds of DFG - German Research Foundation: Gottfried Wilhelm Leibniz-Preis 2011 (FKZFE 570/4-1) and Danish Villum project ReNet.