

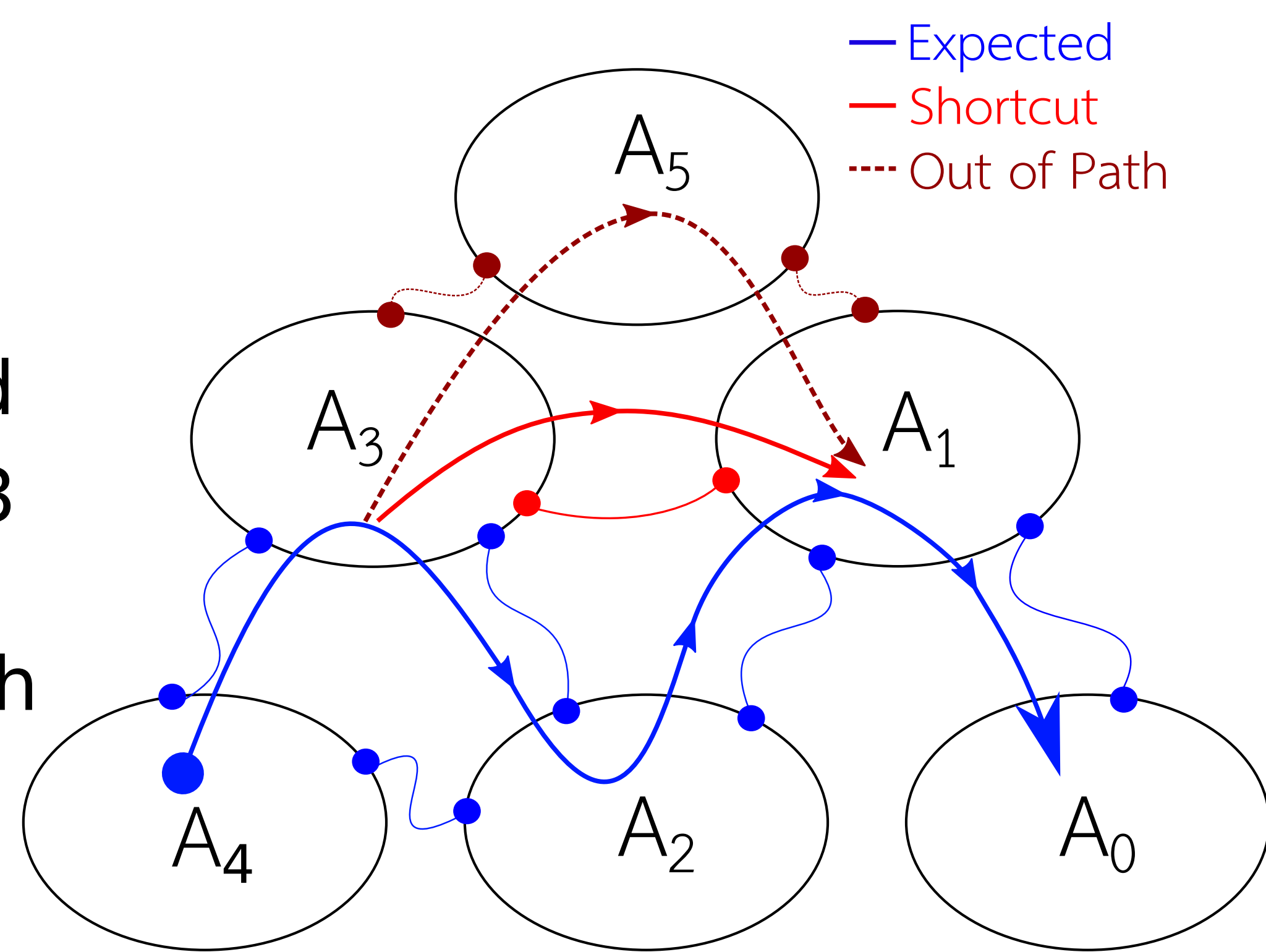
Julian M. Del Fiore, Cristel Pelsser, Pascal Merindol
 Stéphane Cateloin, Jean-Jacques Pansiot
 Contact: delfiore@unistra.fr

A Three-Step BGP-Lie

A₃ advertises to A₄
 AS Path [A₃, A₂, A₁, A₀]

A₄ chooses this path and
 sends data packets to A₃

Data Packets follow a path
 (DP) that disagrees with
 the control path (CP)



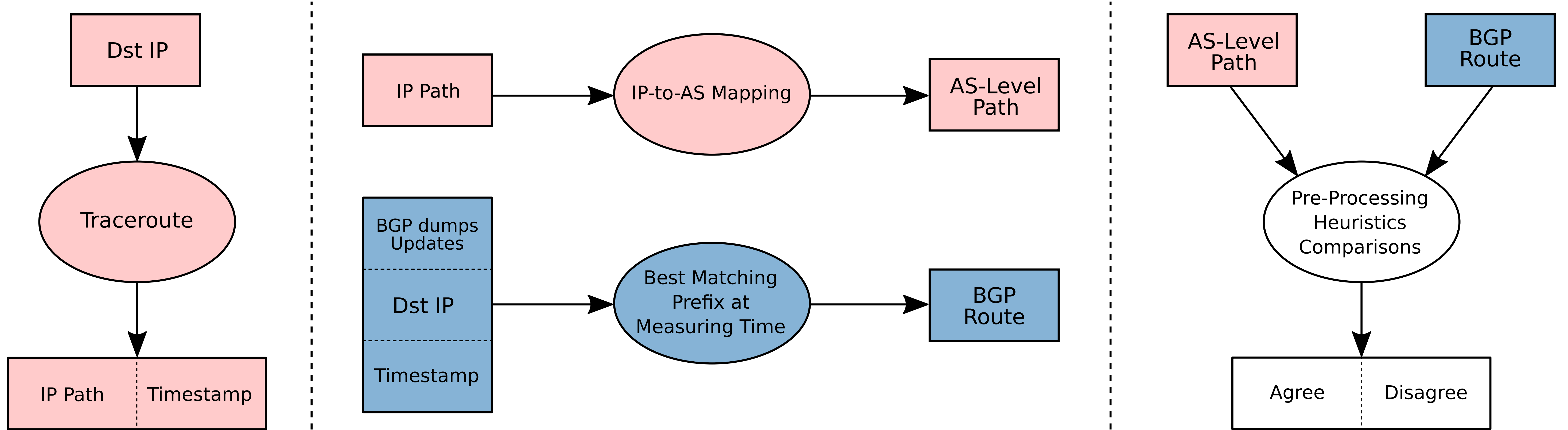
CP: [A₄, A₃, A₂, A₁, A₀] } Agree
 DP: [A₄, A₃, A₂, A₁, A₀]

CP: [A₄, A₃, A₂, A₁, A₀] } Disagree
 DP: [A₄, A₃, A₁, A₀]

CP: [A₄, A₃, A₂, A₁, A₀] } Disagree
 DP: [A₄, A₃, A₅, A₁, A₀]

There was a lie, but who is the liar?

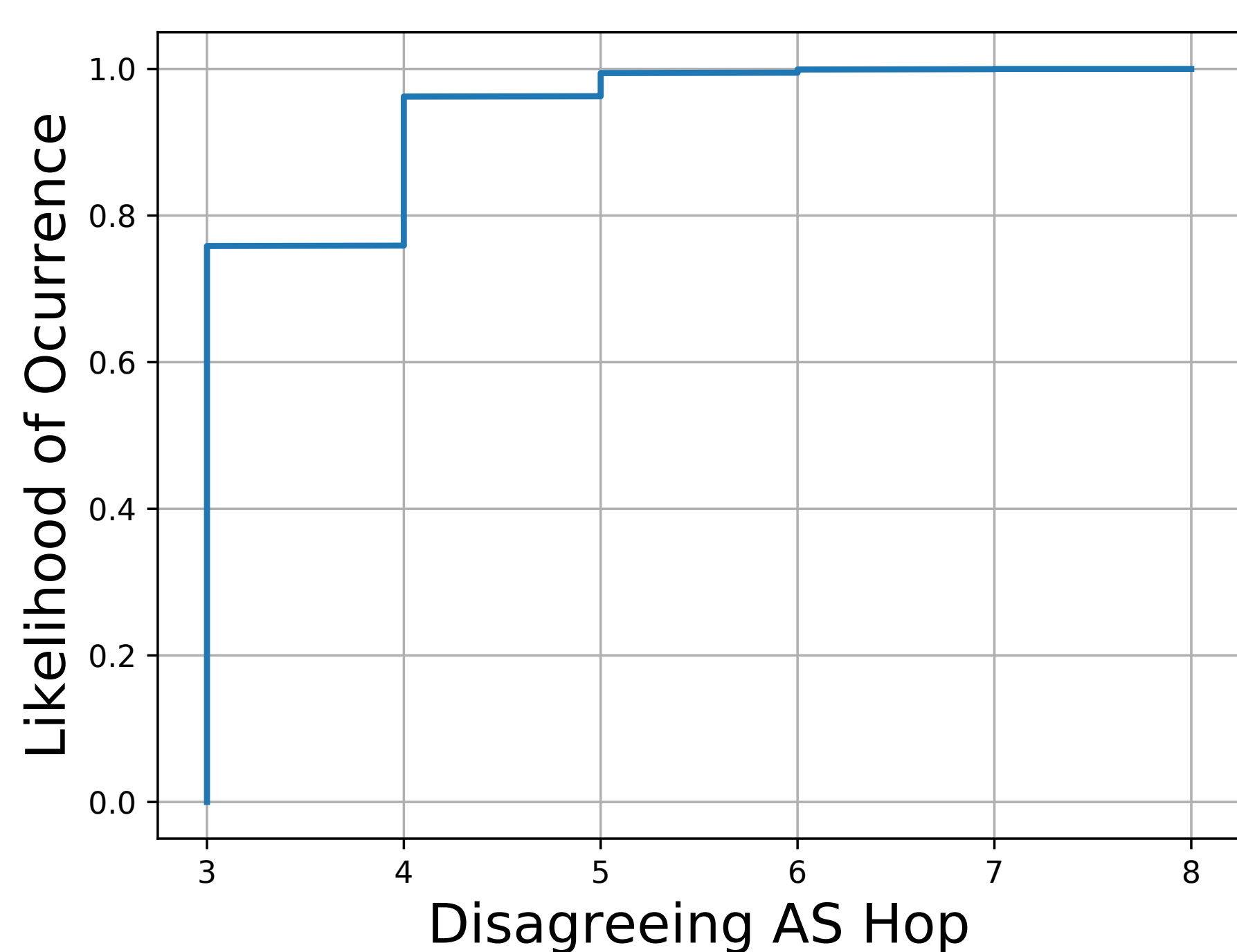
Methodology: A daily Analysis



Experiment: Case of Study

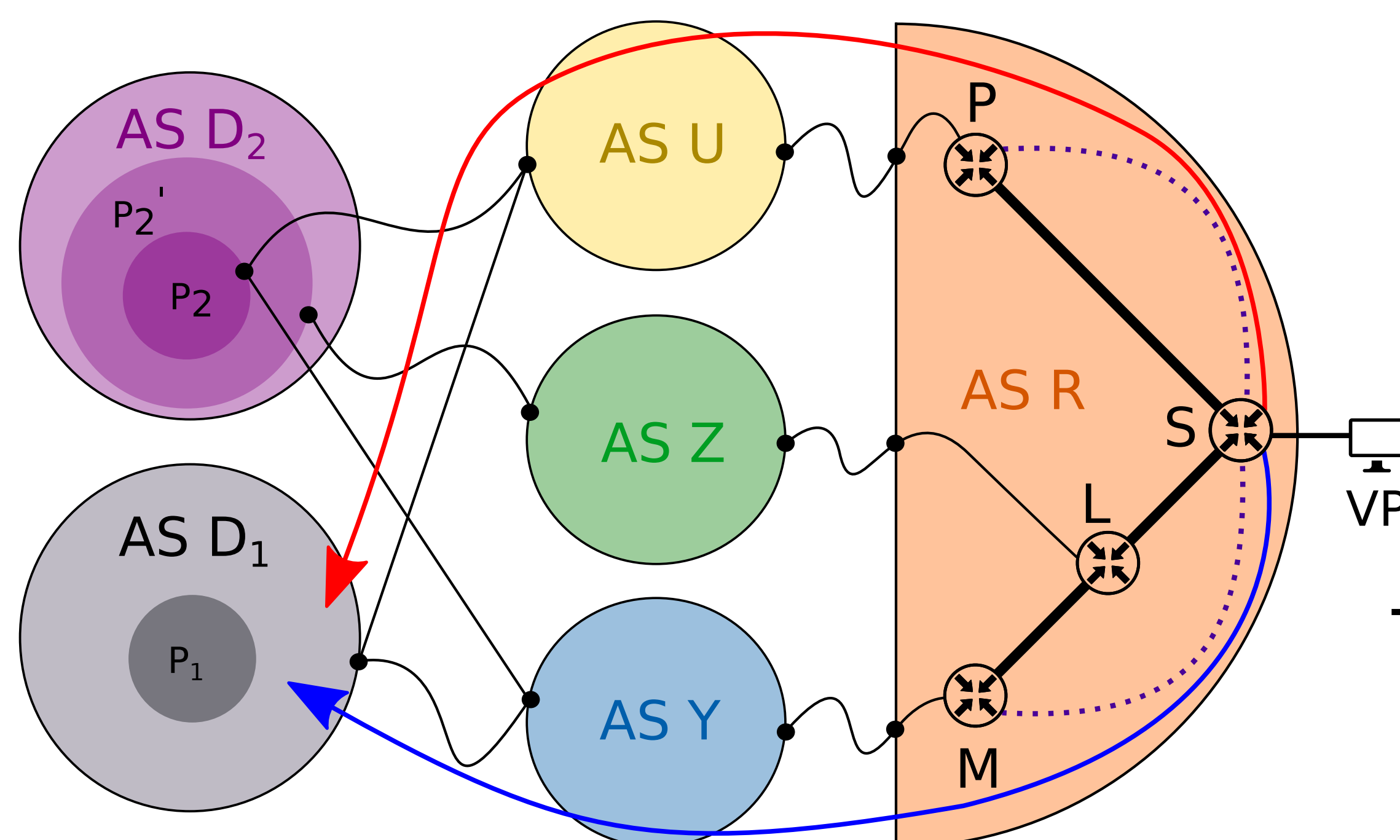
Results

-	Total	Disagreements
Dst IPs	62737	39%
Dst Prefixes	34949	37%



Most Disagreements are due to AS hop 2

Discovered Pattern of Disagreements



Prefix	CP	FIB	DP
P ₁	[R, Y, D ₁] via M	Default Route via P	[R, U, D ₁] via P
P ₂ '	[R, Z, D ₂] via L	[R, Z, D ₂] via L	[R, Z, D ₂] via L
P ₂ ⊂ P ₂ '	[R, U, D ₂] via P	↓	[R, Y, D ₂] via M

Future Work

Increasing Vantage Points
 RIPE ATLAS

Generalizing Methodology
 Formalizing steps to detect liars

The ISP provides us enough insights to explain the disagreement between DP and CP