



RIPE
NCC

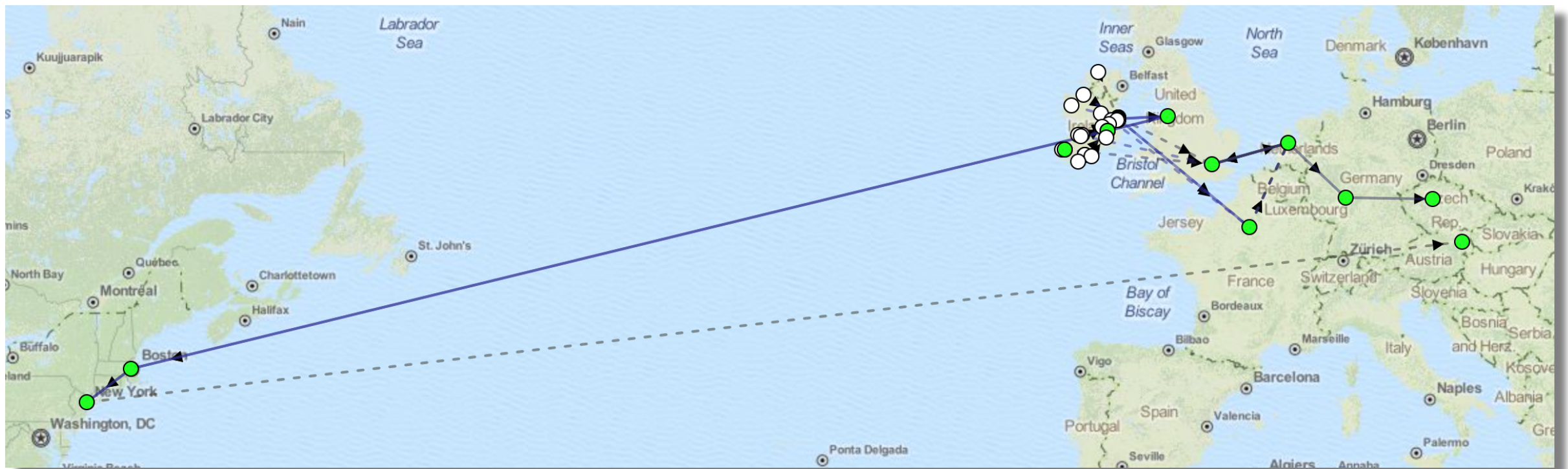
OpenIPMap Update

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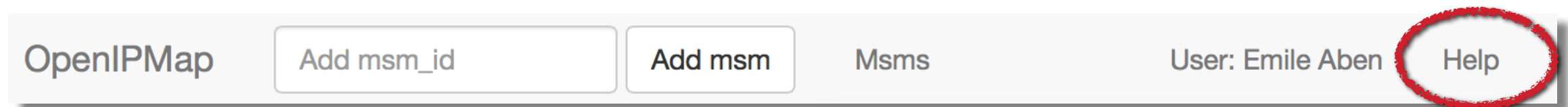
- Open and crowdsourced mapping of IPs and hostnames to geographical locations
- Emphasis on infrastructure, not eyeballs
- Think of OpenStreetMap for IPs
- Database of IP/hostname-Location mappings
 - Example: 154.54.72.253
 - Free edge geoloc: US
 - OpenIPMap: London, GB

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- Allows users to put traceroutes on a map
 - Visually identify outliers/strange routing
- Statistics/Analysis
 - What percentage of observed paths go outside of a country?



- We have crowdsourced data!
 - 19k+ hostname-location mappings
 - Contributed by 18 dedicated operators
 - Lots of traceroutes on a map will show key locations with current data already
 - Prototype: <https://marmot.ripe.net/openipmap/tracemap>
 - Uses RIPE Access for user authentication



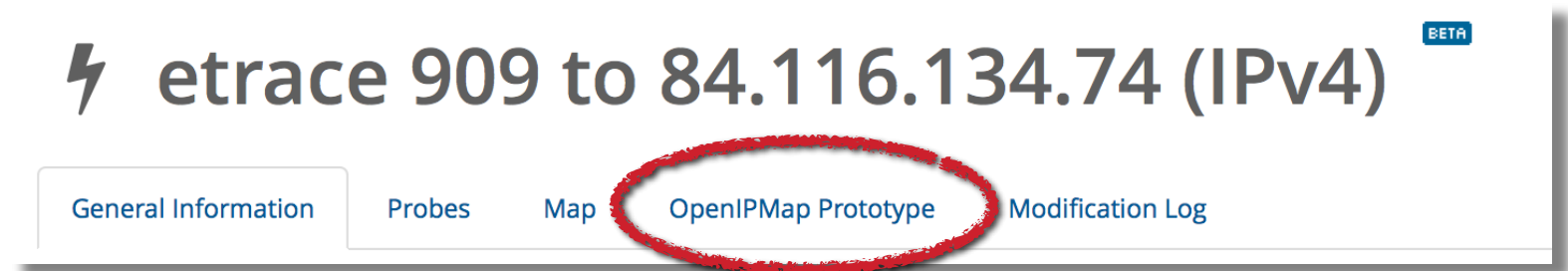
- Collaboration with IXMaps project on data exchange

- Prototype code is on GitHub
 - <https://github.com/RIPE-Atlas-Community/openipmap>
 - django-openipmap : OpenIPMap code
 - openipmap-provision : Create instance of OpenIPMap (for dev)
- Help needed most: user interface

- Bulk Download
 - Hostname-location mappings:
 - https://marmot.ripe.net/openipmap/api/hostname_rules/?format=json
 - IP-location mappings:
 - https://marmot.ripe.net/openipmap/api/ip_rules/?format=json
- Query API
 - <https://marmot.ripe.net/openipmap/ipmeta.json?ip=<ip>>
- Programmatic query interface:
 - <https://github.com/emileaben/py-openipmap>

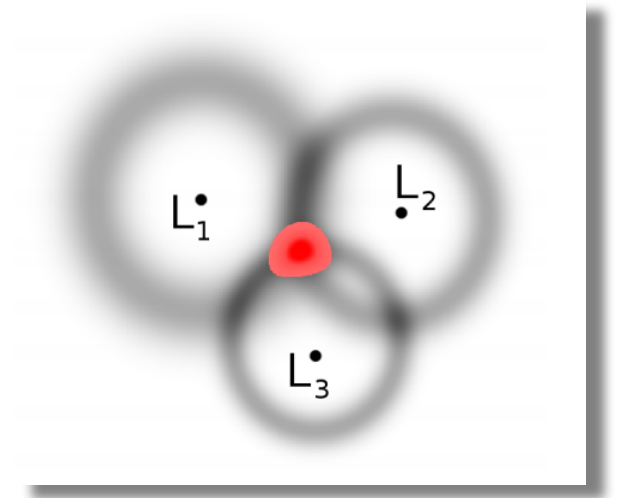
```
import openipmap
oim = openipmap.OpenIPMap()
oim.query('159.134.155.20')
## returns: {'city': u'Dublin,Leinster,IE', 'lat': 53.33306, 'lon': -6.24889}
```

- Initially: Small army of volunteers
- Now: OpenIPMap included in RIPE Atlas' new traceroute results interface



- Open mailing list
 - <https://www.ripe.net/mailman/listinfo/openipmap>
 - Discuss requested features
 - Project updates

- RTT based constraints/validation
 - Challenges:
 - Incorrect RIPE Atlas probe geolocation
 - Last-mile latency
- Bulk data entry / capturing naming schemes
 - Rudimentary bulk-upload available
 - CAIDA DDec: <http://ddec.caida.org/>
 - Challenge: Keep data quality high
 - Non-negligible fraction of location encoding in hostnames is wrong



From: http://lakis.web.elte.hu/publ/laki_infocom2011.pdf

- Use the data
 - Help crowdsource
 - Help code
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- <https://marmot.ripe.net/openipmap/>
 - <https://github.com/RIPE-Atlas-Community/openipmap>

