VERY LONG BASELINE INFEROMETRY

5

- Space out mutliple syncronised telescopes around the earth and collect data $y \in \mathbb{Y}$

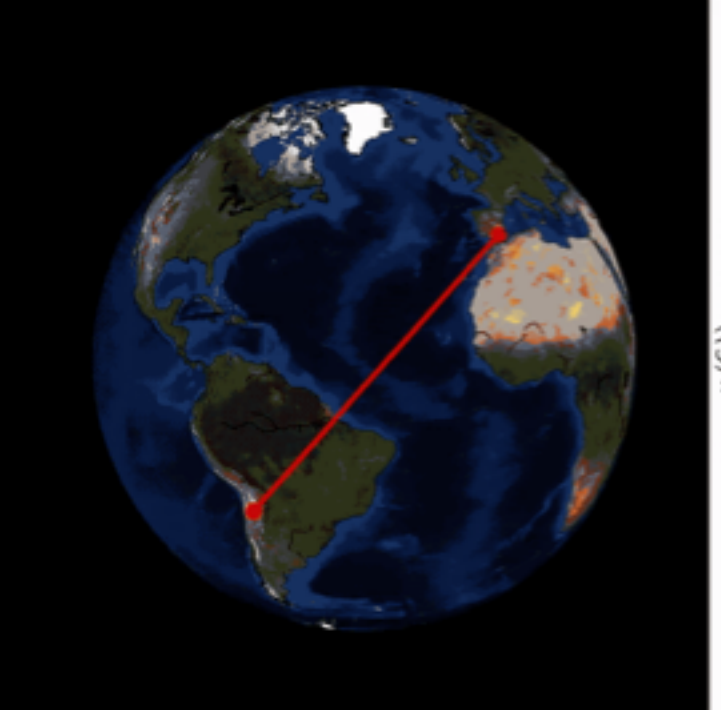
- Model the data $y \in \mathbb{Y}$ using some parameters $x \in \mathbb{X}$ with likelihood $L(y \mid x)$

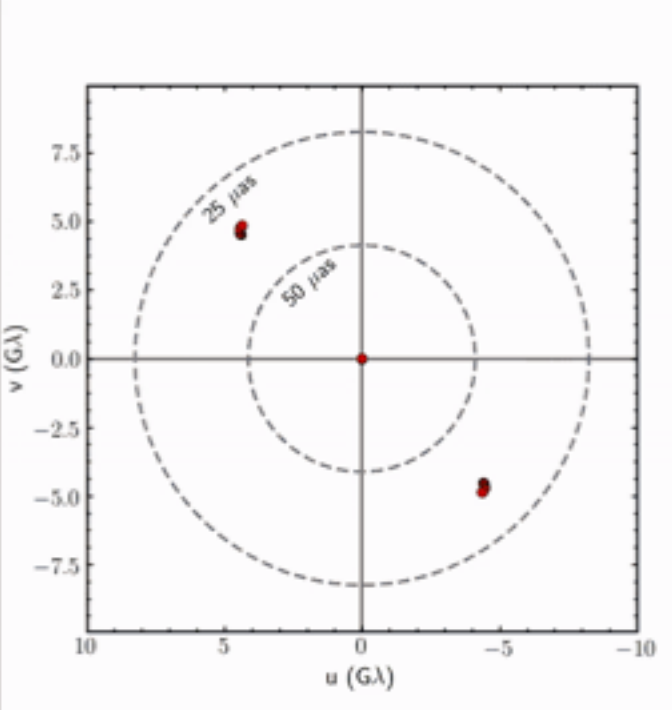
- Given the data, we want to predict what image $x \in \mathbb{X}$ was generated.

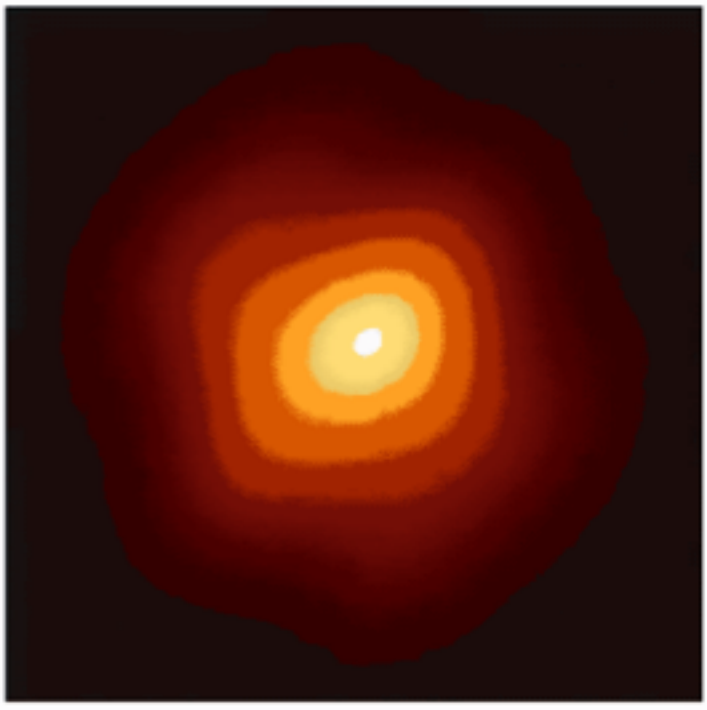
$$x = A^{-1}(y - \epsilon)$$

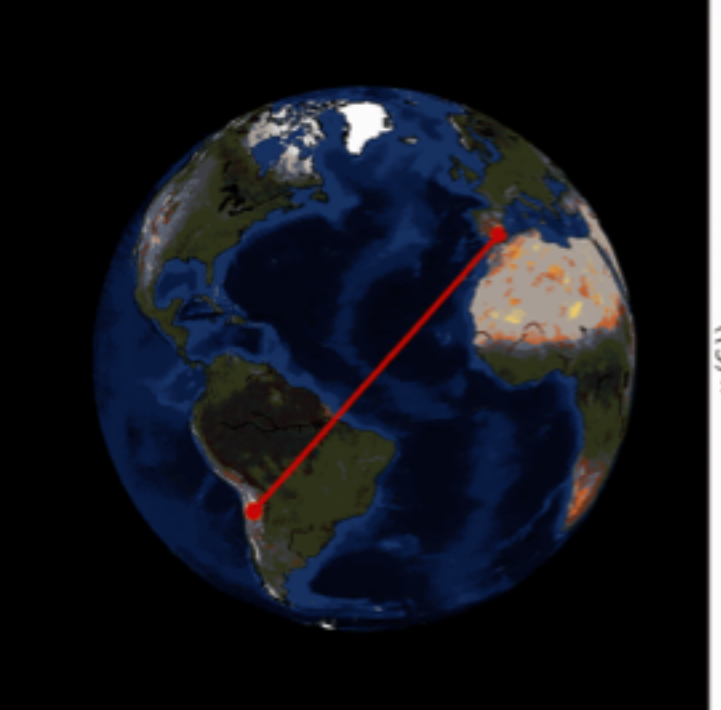
- $A : \mathbb{X} \rightarrow \mathbb{Y}$ is a non-linear transformation and ϵ is the mearurement error

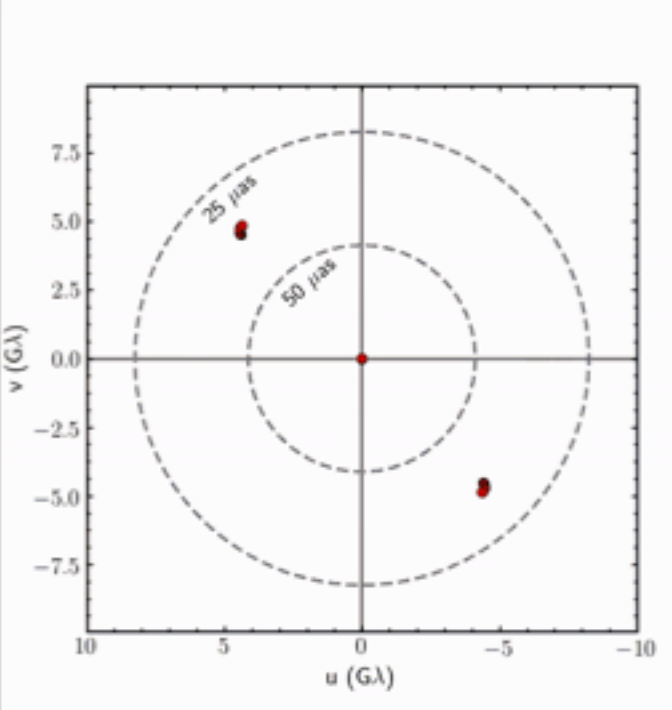
$$y = A(x) + \epsilon, \quad \epsilon \sim N(0, \Sigma)$$

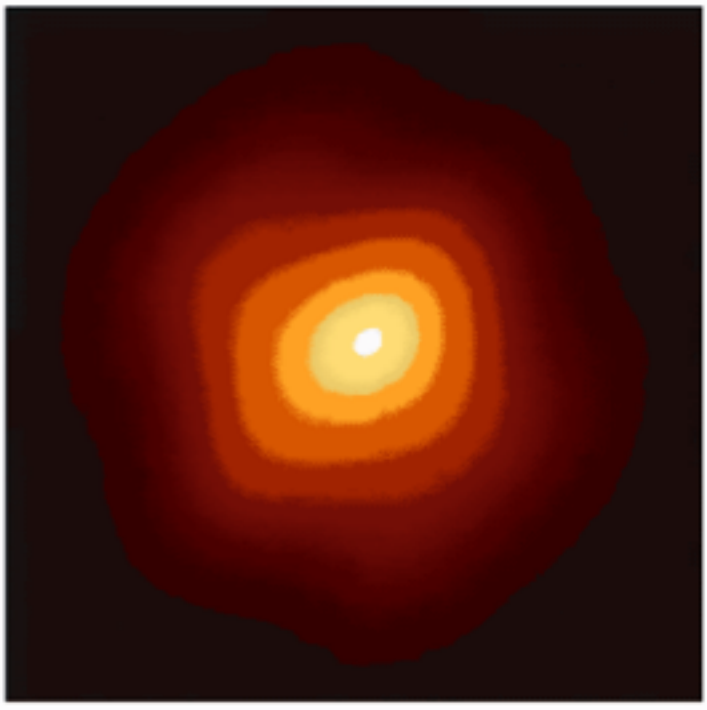


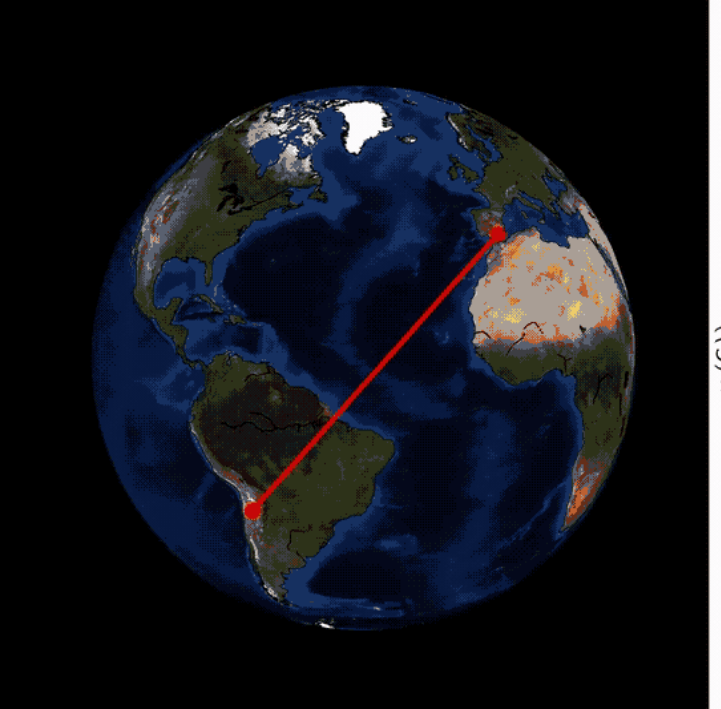

25 μas
50 μas
v (Gλ)
u (Gλ)
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
10
5
0
−5
−10

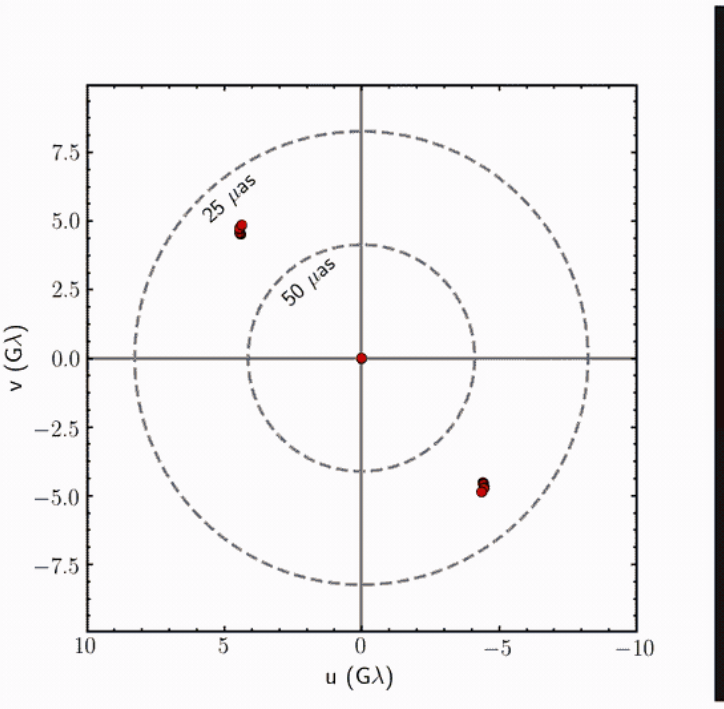


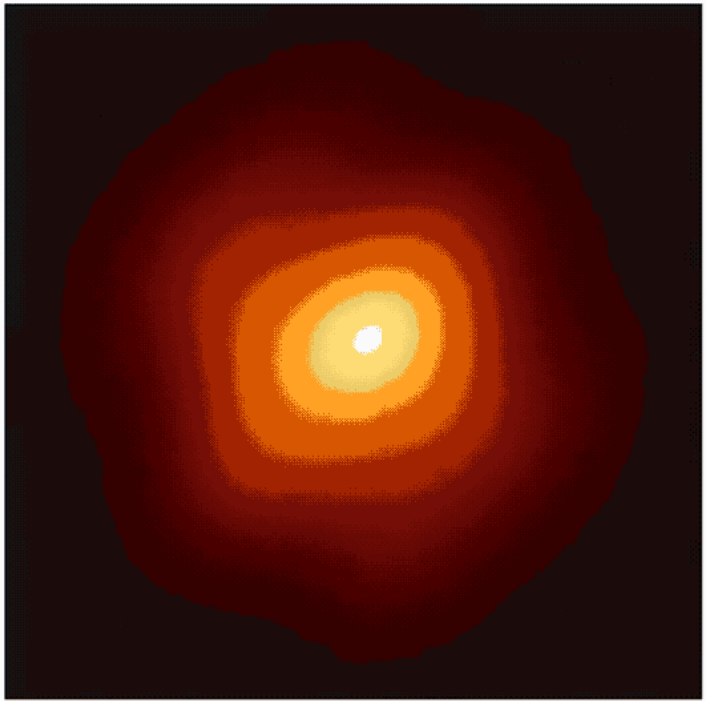



25 μas
50 μas
v (Gλ)
u (Gλ)
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
10
5
0
−5
−10



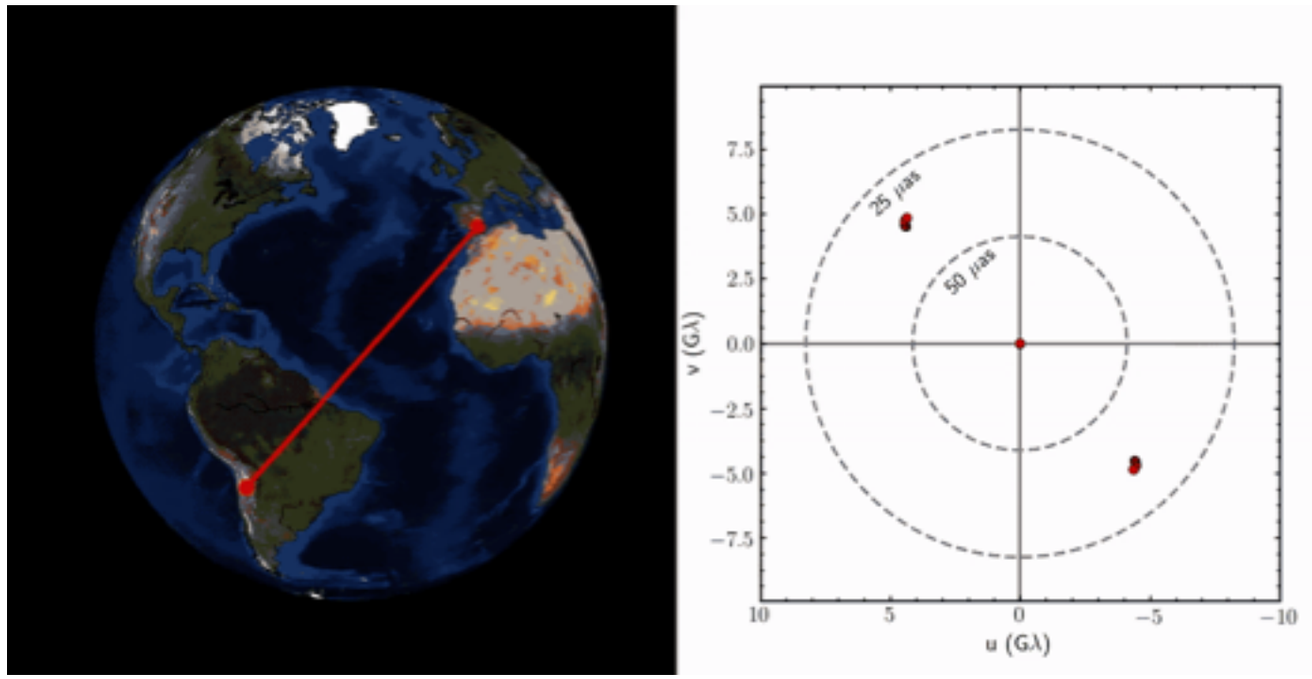



25 μas
50 μas
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
v (Gλ)
10
5
0
−5
−10
u (Gλ)



VERY LONG BASELINE INFEROMETRY

- Space out mutliple syncronised telescopes around the earth and collect data $y \in \mathbb{Y}$



- Model the data $y \in \mathbb{Y}$ using some parameters $x \in \mathbb{X}$ with likelihood $L(y \mid x)$
  - $A : \mathbb{X} \to \mathbb{Y}$ is a non-linear transformation and ϵ is the mearurement error

$$y = A(x) + \epsilon, \quad \epsilon \sim N(0, \Sigma)$$

- Given the data, we want to predict what image $x \in \mathbb{X}$ was generated.

$$x = A^{-1}(y - \epsilon)$$

BAYESIAN INVERSE PROBLEMS