

1. Choose ellipse: $\boldsymbol{\nu} \sim \mathcal{N}(0, \Sigma)$
2. Log-likelihood threshold:

$$u \sim \text{Uniform}[0, 1]$$

$$\log y \leftarrow \log L(\mathbf{f}) + \log u$$

3. Draw an initial proposal, also defining a bracket:

$$\theta \sim \text{Uniform}[0, 2\pi]$$

$$[\theta_{\min}, \theta_{\max}] \leftarrow [\theta - 2\pi, \theta]$$

4. $\mathbf{f}' \leftarrow \mathbf{f} \cos \theta + \boldsymbol{\nu} \sin \theta$
5. **if** $\log L(\mathbf{f}') > \log y$ **then:**

6. Accept: **return** \mathbf{f}'

7. **else:**

Shrink the bracket and try a new point:

8. **if** $\theta < 0$ **then:** $\theta_{\min} \leftarrow \theta$ **else:** $\theta_{\max} \leftarrow \theta$

9. $\theta \sim \text{Uniform}[\theta_{\min}, \theta_{\max}]$

10. **GoTo** 4.