





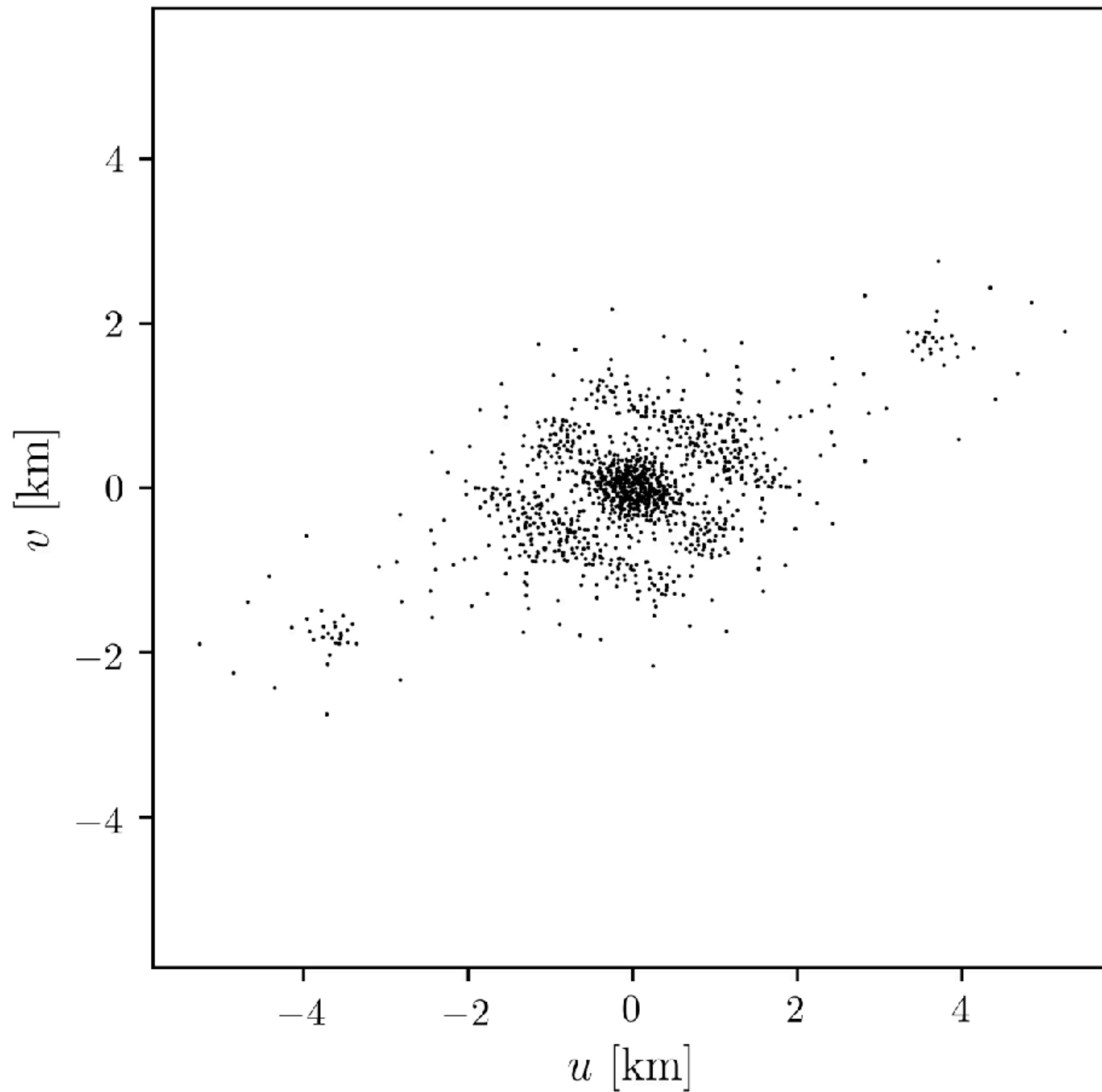


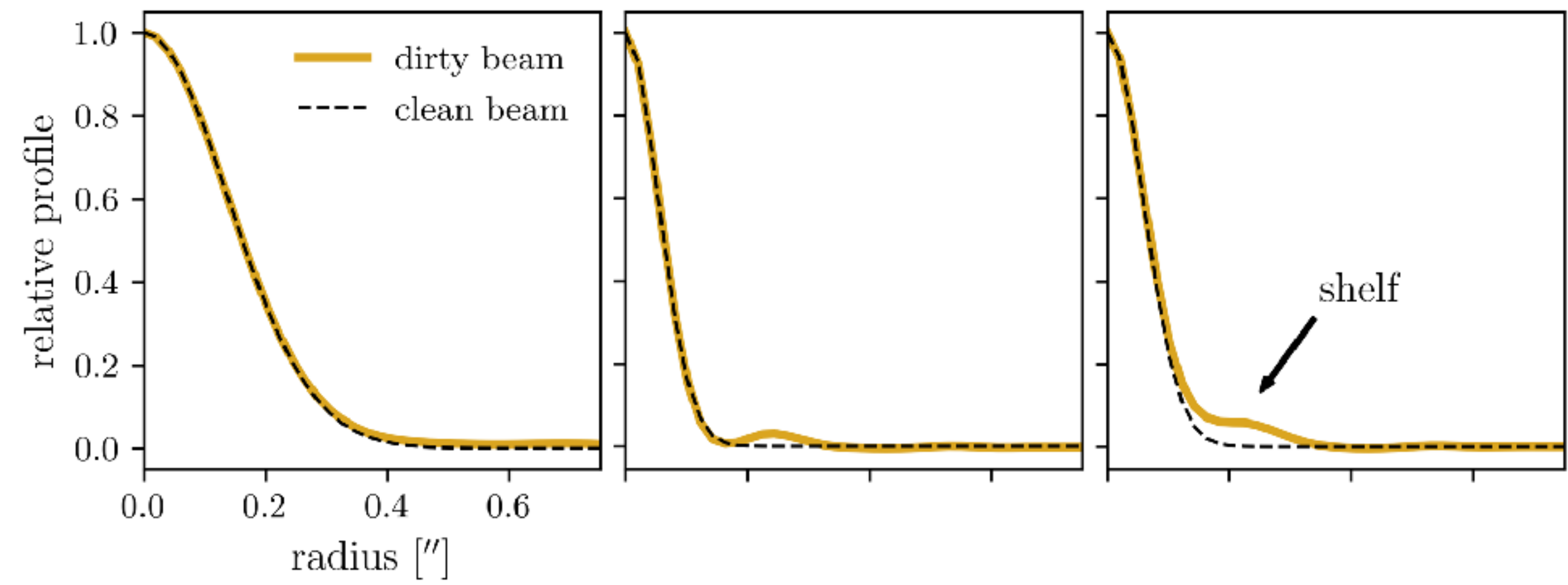
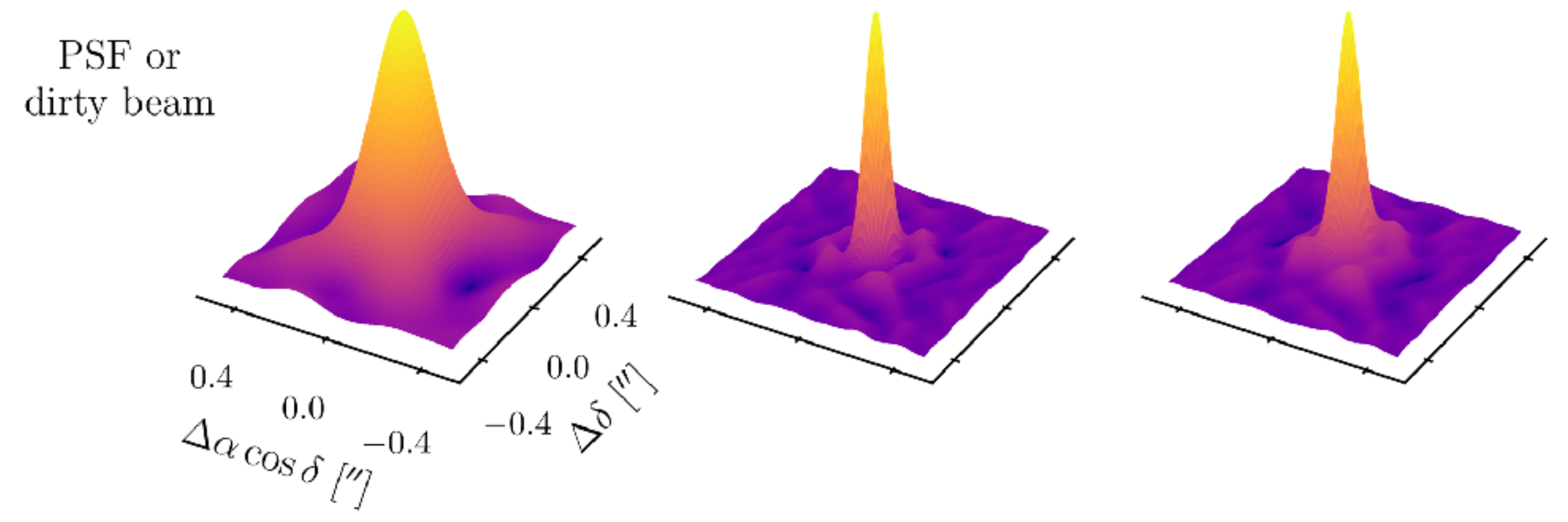
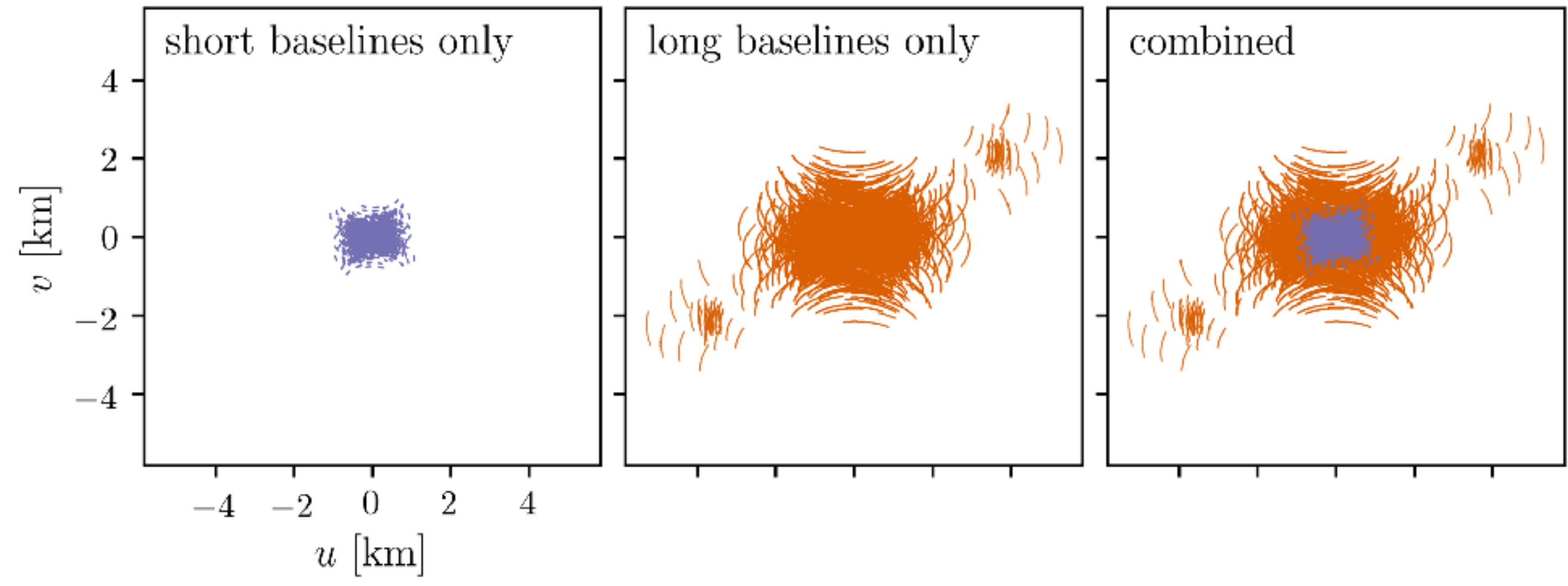
*A. Marinkovic/X-Cam/ALMA (ESO/NAOJ/NRAO)*



# Aperture synthesis with Earth-rotation – samples more baselines!

$$N_{\text{baselines}} = N_A(N_A - 1)/2 \gtrsim 900$$



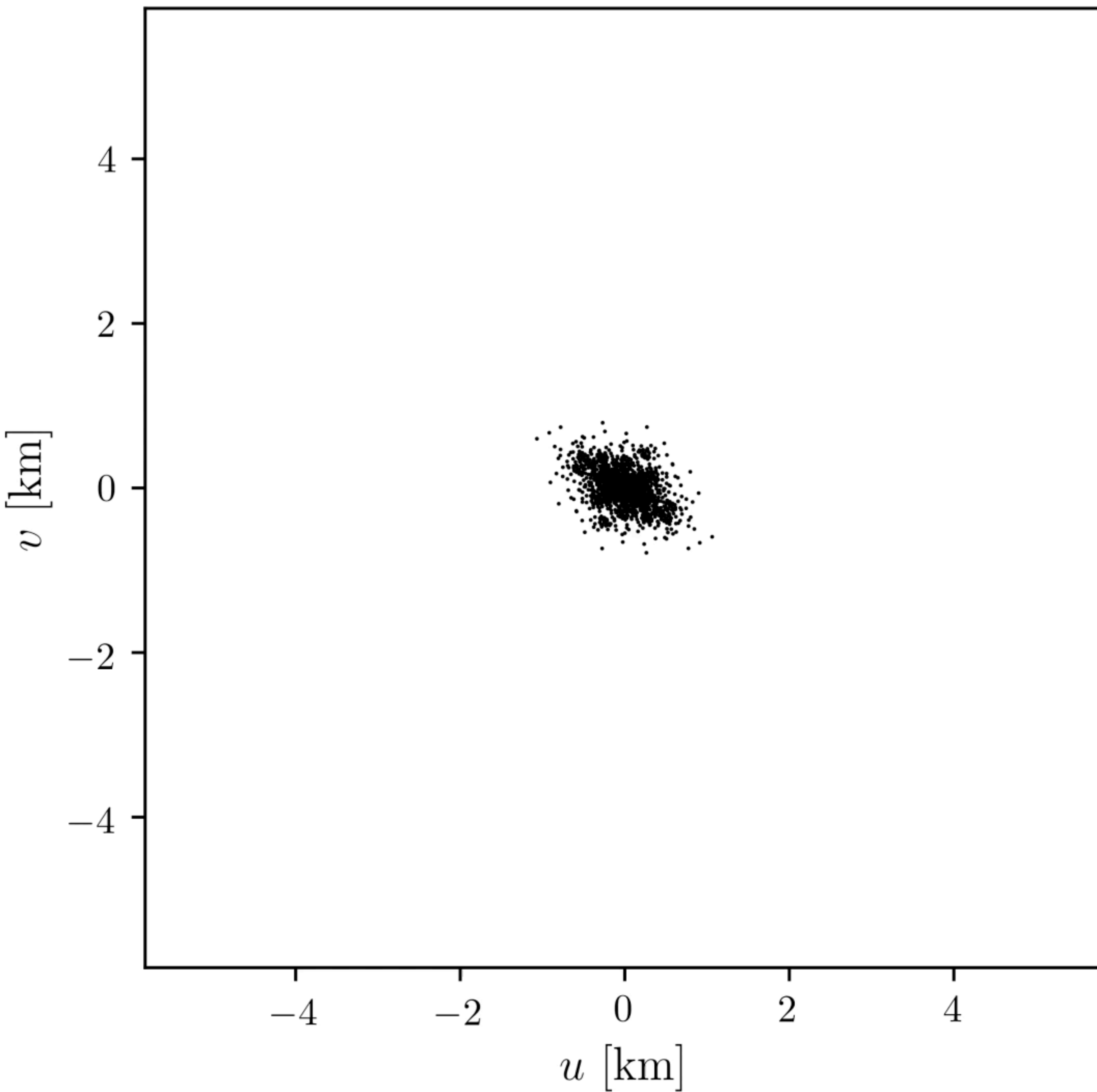








**EB1: 31-Oct-2018 #1**



# Images $\Leftrightarrow$ Visibilities

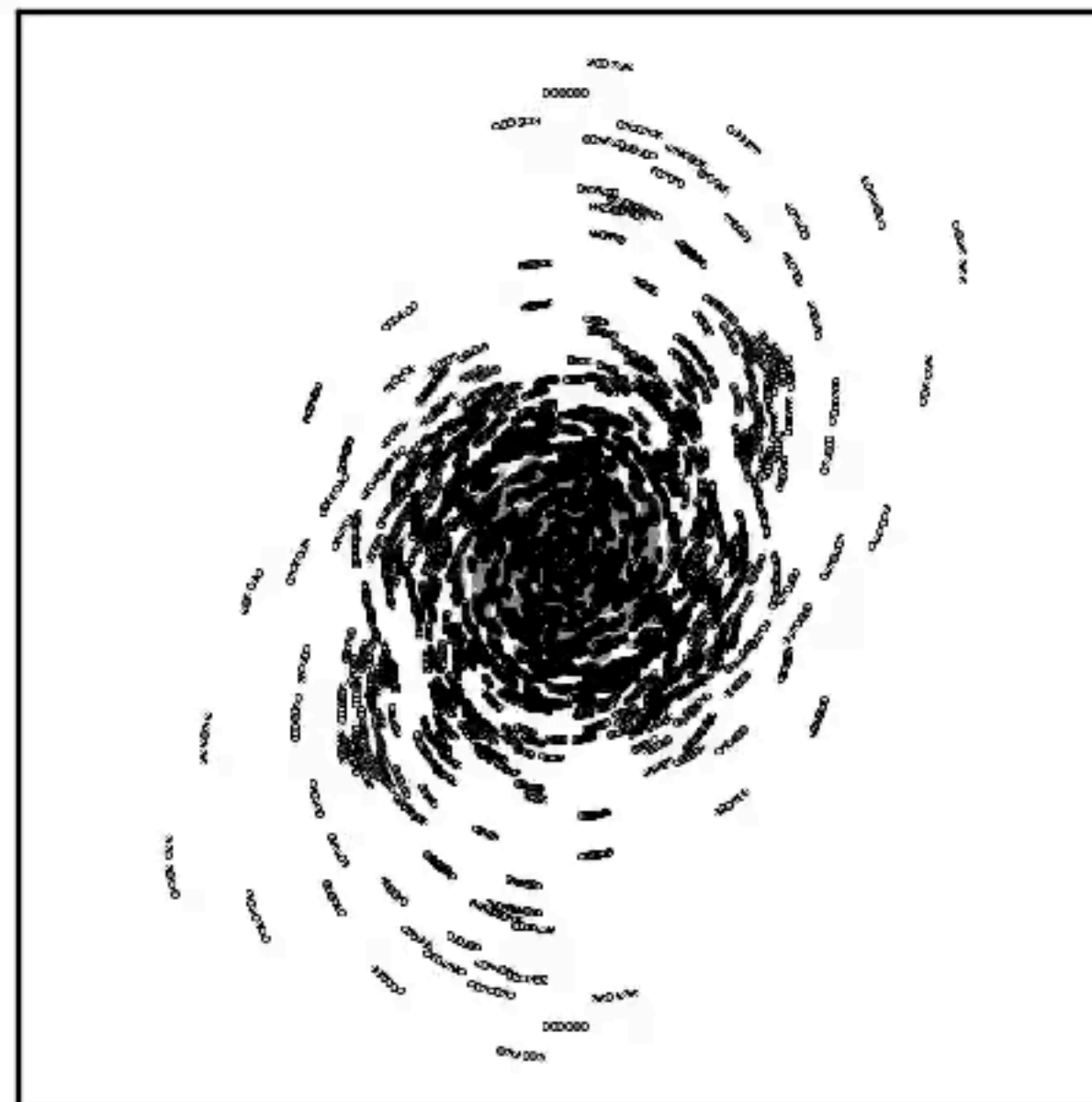
The visibility function is the Fourier transform of the sky  $I(x, y)$

$$\mathcal{V}(u, v) = \iint I(x, y) \exp \{ -2\pi i(ux + vy) \} dx dy$$

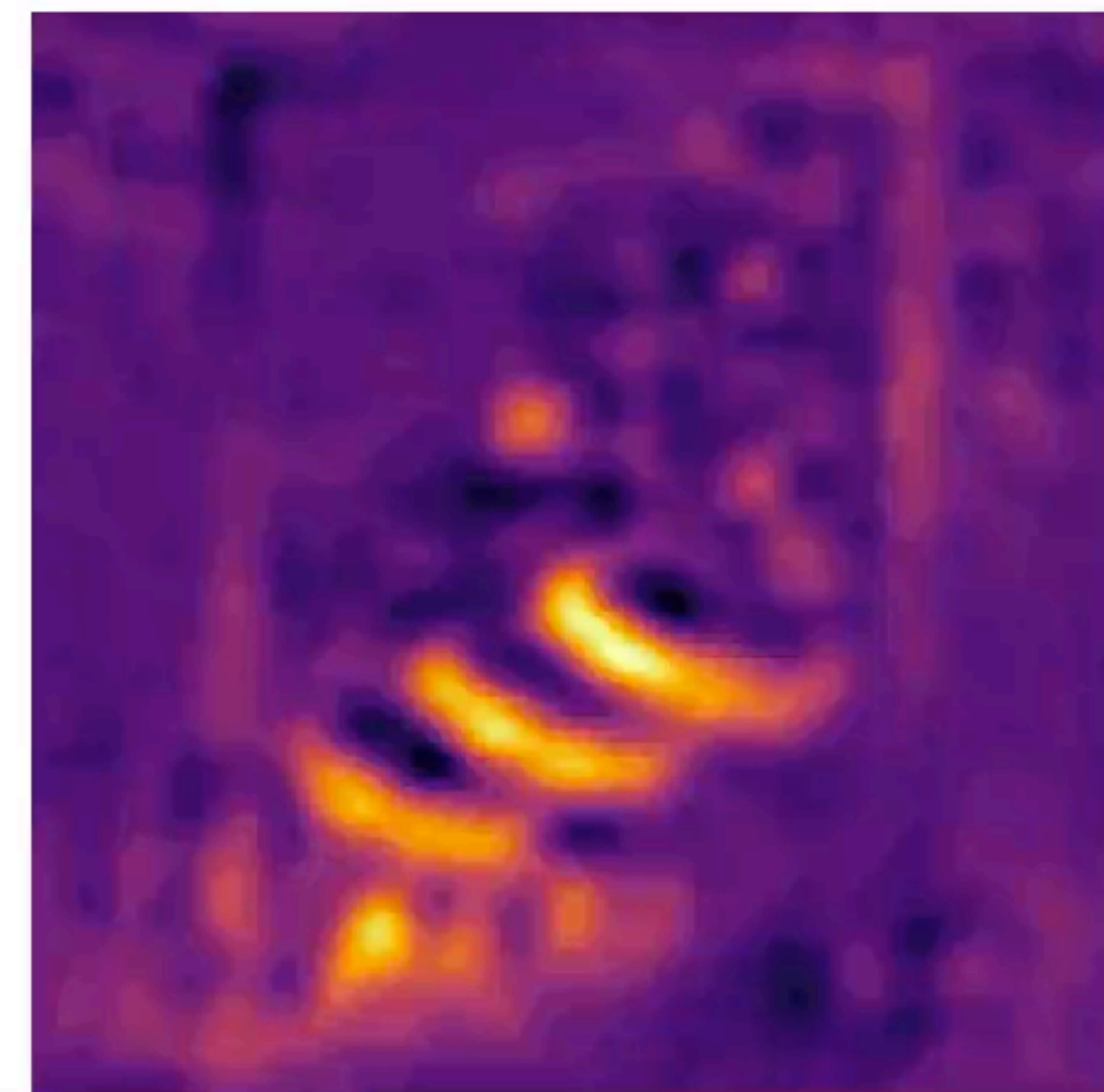
Interferometers (noisily) sample this function at a set of  $(u, v)$  points.  
Not all spatial frequencies are measured!



Sky brightness



Visibility samples



Reconstructed image

I. Czekala