-2^{15}

(u, v)

$$\mathrm{V(u,v)} = \mathrm{FT}\{B_{\mathrm{primary}} . I_{\mathrm{source}}\}(\mathrm{u,v}) + \mathrm{N}$$

$$\mathrm{FT}\left\{F\right\}(u,v)$$

F


B_{primary}

N

$V(u, v)$

$$V = \mathrm{FT}\left\{B_{\mathrm{primary}} \cdot I_{\mathrm{source}}\right\}$$

S

$S(u, v) = 1/\sigma^2$

σ

$$S(u, v) = 0$$

$$B_{\text{dirty}} = \text{FT}^{-1}\{S\}$$

$$I_{\text{dirty}} = \text{FT}^{-1}\left\{S.V\right\}.$$

$$I_{\text{dirty}} = B_{\text{dirty}} * \left\{ B_{\text{primary}} . I_{\text{source}} \right\},$$

*

$$\{B_{\text{primary}} \cdot I_{\text{source}}\} = I_{\text{point}}$$

$$I_{\text{dirty}} = B_{\text{dirty}} . I_{\text{point}} = B_{\text{dirty}}$$

$I_{\text{point}} = 1$

$\left(1/\sigma^2\right)$

$W(u, v)$

$$B_{\text{dirty}} = \text{FT}^{-1}\left\{W.S\right\}$$

$$I_{\text{dirty}} = \text{FT}^{-1}\left\{W.S.V\right\}.$$

W

$W.S$

$W = 1$

$$W = \exp\left\{ -\frac{\left(u^2 + v^2\right)}{t^2} \right\},$$

> 0

-1

$2^n 3^p 5^q$

p

q

$2^k 3^p 5^q$

uv

0.8σ

$0 < \gamma < 2$

$\gamma = 1$

$$\propto (1-\gamma)^{n_{\mathrm{comp}}}$$

n_{comp}

$\gamma \simeq 0.1 - 0.2$

$2 \times 55''$

$2 \times 22''$

$$V(u,v) = \mathrm{FT}\left\{B_{\mathrm{primary}} . I_{\mathrm{source}}\right\}(u,v) + N$$

$$\mathrm{FT}\left\{F\right\}\left(f\right)$$

u, v

$$V(u=0,v=0) \overset{\mathrm{FT}}{\rightleftharpoons} \sum_{ij \ \in \ \mathrm{image}} \left\{ B_{\mathrm{primary}} . I_{\mathrm{source}} \right\}_{ij} .$$

$$V(u=0, v=0)$$

$$M(\alpha,\delta) = \frac{\sum_i \frac{B_i(\alpha,\delta)}{\sigma_i^2} F_i(\alpha,\delta)}{\sum_i \frac{B_i(\alpha,\delta)^2}{\sigma_i^2}},$$

$M(\alpha, \delta)$

(α, δ)

B_i

i

F_i

σ_i

$N(\alpha, \delta)$

(α, β)

$$N(\alpha,\delta) = \frac{\sum_i \frac{B_i(\alpha,\delta)}{\sigma_i^2}\, N_i(\alpha,\delta)}{\sum_i \frac{B_i(\alpha,\delta)^2}{\sigma_i^2}},$$

$$\sigma(\alpha,\delta) = \frac{\sqrt{\sum_i \frac{B_i(\alpha,\delta)}{\sigma_i^2}}}{\sum_i \frac{B_i(\alpha,\delta)^2}{\sigma_i^2}} = \frac{1}{\sqrt{\sum_i \frac{B_i(\alpha,\delta)^2}{\sigma_i^2}}}$$

$M(\alpha, \beta)/\sigma(\alpha, \beta)$

d

$\sim d$

$$I^{\mathrm{sd}}_{\mathrm{meas}} = B_{\mathrm{sd}} \star I_{\mathrm{source}} + N,$$

$$I^{\mathrm{id}}_{\mathrm{meas}} = B_{\mathrm{dirty}} \star \{B_{\mathrm{primary}} . I_{\mathrm{source}}\} + N,$$

$B_{\text{primary}} \cdot I_{\text{source}}$

$$I^{\mathrm{id}}_{\mathrm{sky}} = B_{\mathrm{clean}} \star I_{\mathrm{source}} + N',$$

N'

$$I^{\mathrm{id}}_{\mathrm{sky}} = \text{Highpass-filter}\left\{B_{\mathrm{clean}} \star I_{\mathrm{source}}\right\} + N'.$$

$$I^{\mathrm{id}}_{\mathrm{clean}}$$

$$\mathrm{FFT}(uv) = f(uv)\mathrm{FFT}(I^{\mathrm{sd}}_{\mathrm{meas}} + (1 - f(uv))\mathrm{FFT}(I^{\mathrm{id}}_{\mathrm{sky}}$$

$f(uv)$

$$V(u,v) = \left\{ \mathrm{FT}(B_{\mathrm{primary}}) \star \mathrm{FT}(I_{\mathrm{source}}) \right\}(u,v) + N.$$

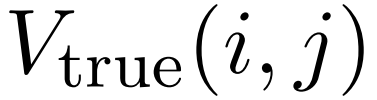
$D = d$

$N(N-1)/2$

$N-1$

$$V_{\text{obs}}(i,j,t) = G(i,t)G^{\star}(j,t)V_{\text{true}}(i,j) + Noise$$

$G(i,t)$



$$\frac{V_{\mathrm{obs}}(i,j,t)}{V_{\mathrm{mod}}(i,j)} = G(i,t)G^{\star}(j,t)$$

$V_{\mathrm{mod(i,j)}} = (1.0, 0.0)$

k

$$V_{\mathrm{obs(k=0)}} = V_{\mathrm{obs}}$$

$$V_{\mathrm{obs}}(k+1) = \frac{V_{obs}(k)}{(G_i G_j^{\star})}$$

V_{obs}/V_{mod}


$$V_{ij}V_{jk}V_{ki}$$

$$(V_{ij}V_{kl})/(V_{ik}V_{jl})$$

$6 - 60$

$45 - 120$

< 40

$f(x)$

$$F(X) = \int_{-\infty}^{+\infty} f(x) e^{-2i\pi x X} dx$$

$$h(x) = af(x) + bg(x)$$

$$H(X) = aF(X) + bG(X)$$

$$h(x) = f(x - x_0)$$

$$H(X) = e^{-2i\pi x_0 X} F(X)$$

$$h(x) = e^{2i\pi x X_0} f(x)$$

$$H(X) = F(X - X_0)$$

$h(x) = f(ax)$

$$H(X) = \frac{1}{|a|} F(\frac{X}{a})$$

$a = 1$

$$h(x) = \overline{f}(x)$$

$$H(X) = \bar{F}(-X)$$

$X = 0$

$$F(0) = \int_{-\infty}^{+\infty} f(x)dx$$

$$h(x) = f(x) * g(x)$$

$$H(X) = F(X)G((X)$$

x