



Siddhant Mishra-Sharma (MIT/AI FI) Summer School



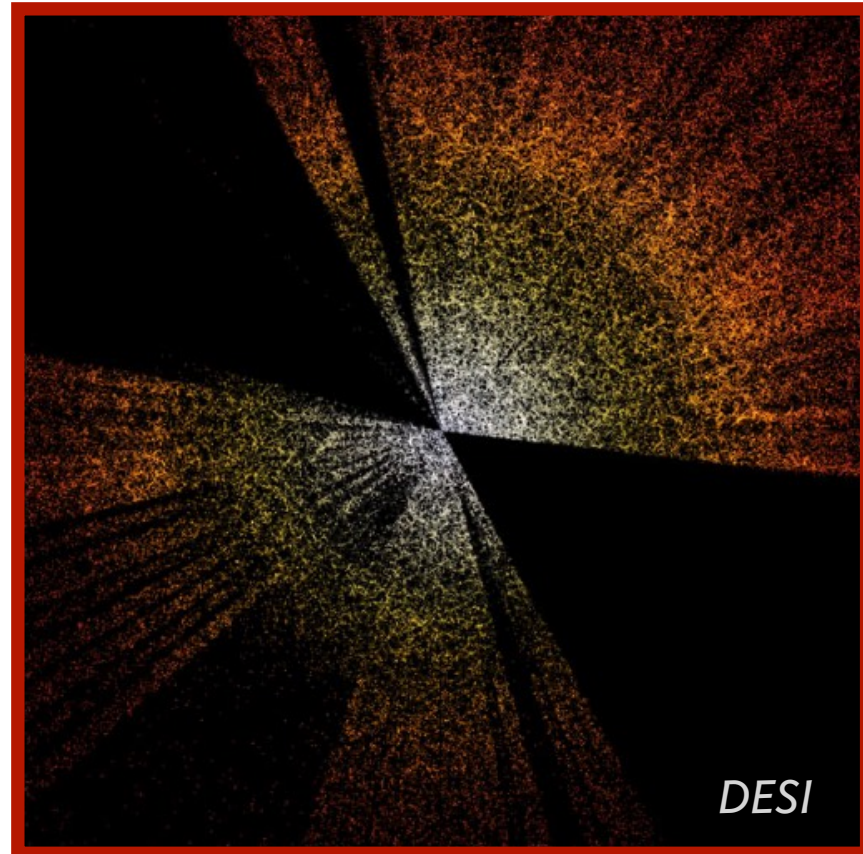
162

4

8

The likelihood of a galaxy field

$p$  (



Cosmology parameters

$$\Omega_m, \sigma_8, \dots$$

Galaxy-halo connection  
(HOD, semi-analytical,...)

)



*Simplify this*



*and/or this*

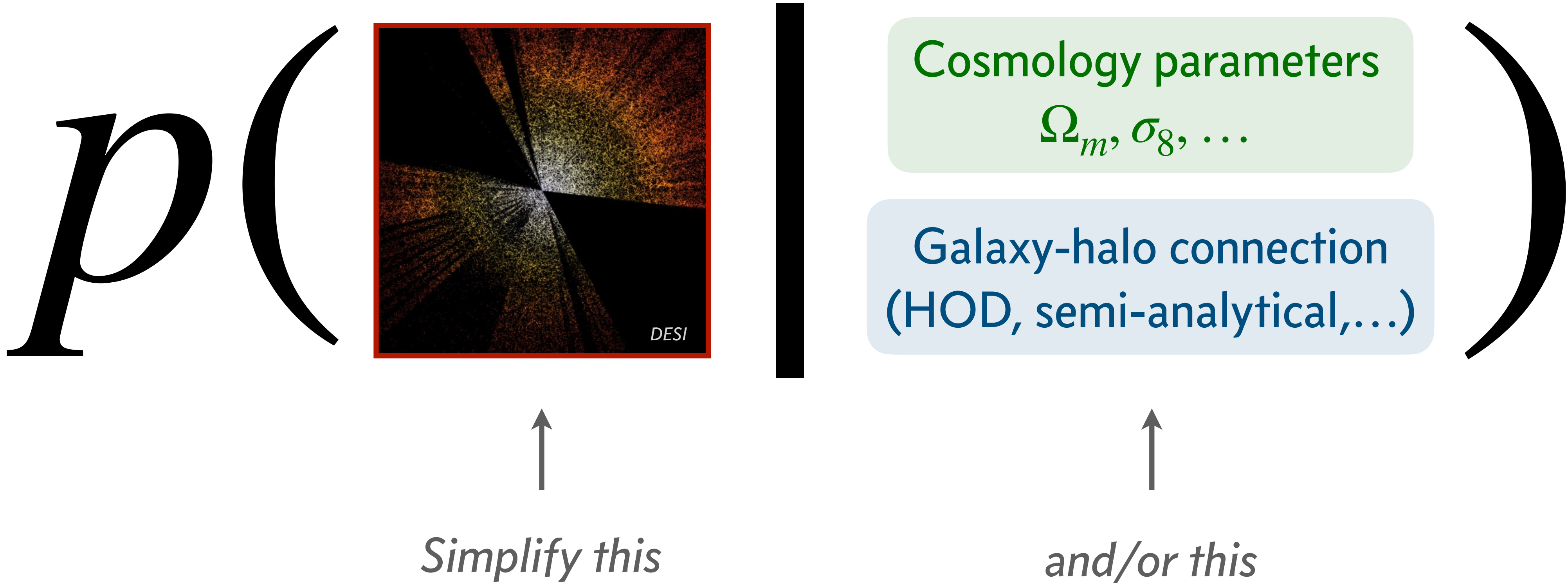
**Intractable!**



$$p(x|\theta)$$

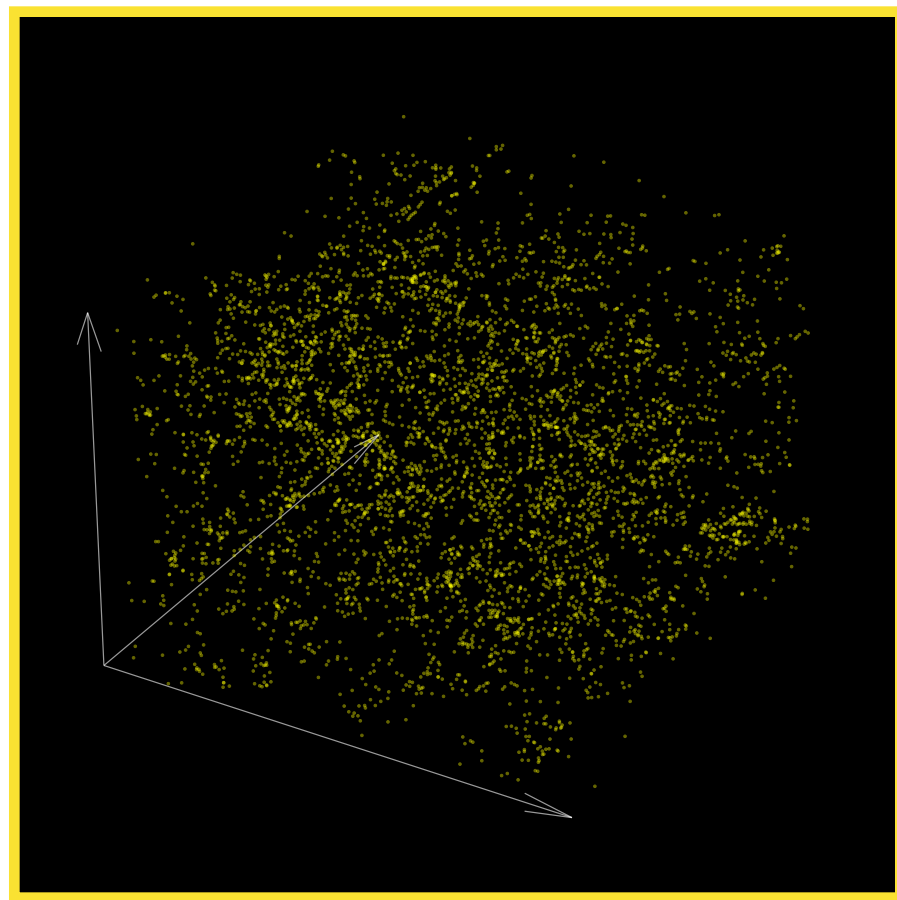
The likelihood of a galaxy field

$$p(x \mid \theta)$$



Intractable!

# Emulation and inference



$$\sim p\left(\text{[Image of a galaxy cluster]} \mid \begin{matrix} \text{Cosmology} \\ \text{Galaxy-halo} \end{matrix}\right) \quad \textit{Emulation/sampling}$$