

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

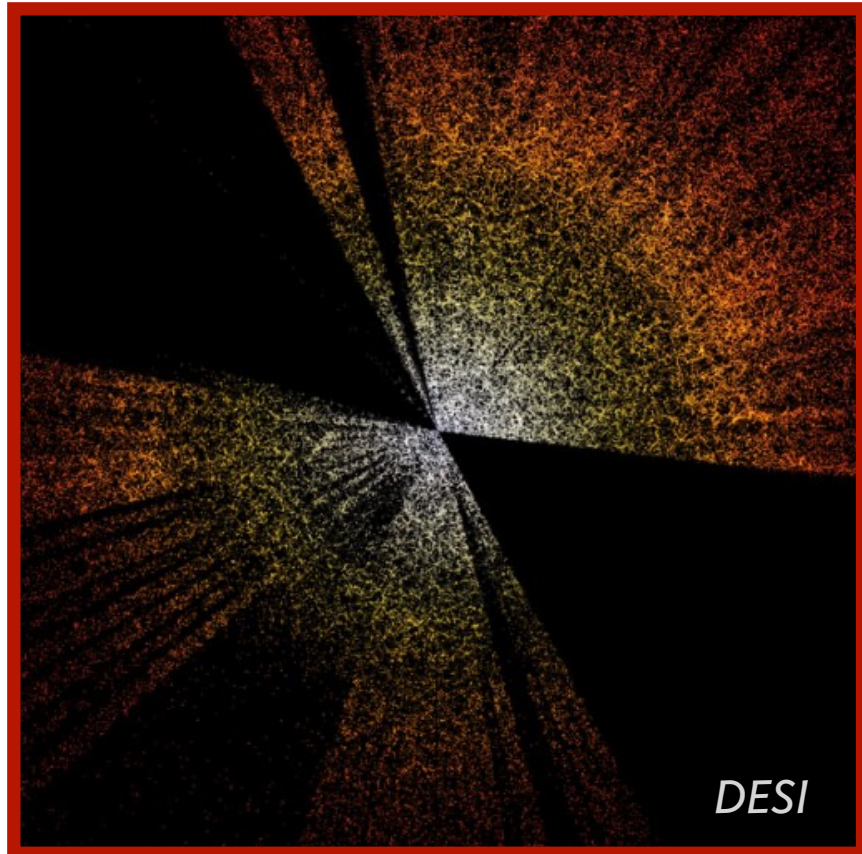
166

4

8

The likelihood of a galaxy field

p (



Cosmology parameters

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

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

)



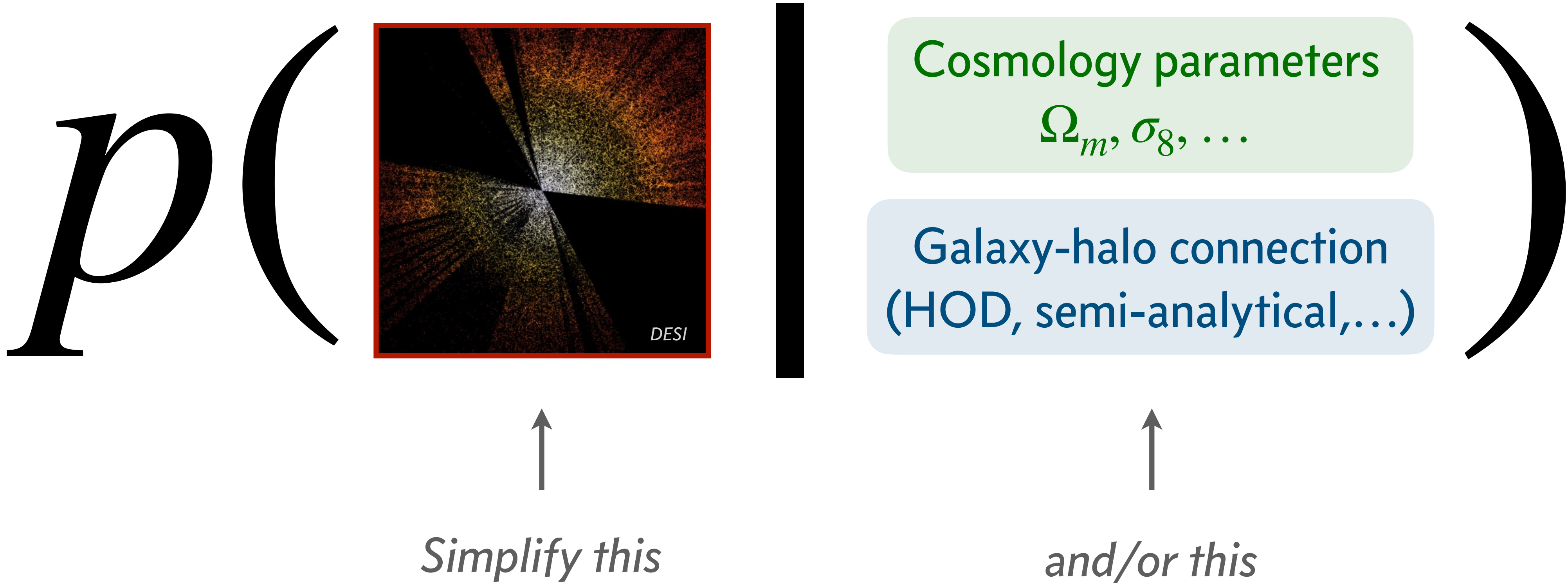
Simplify this



and/or this

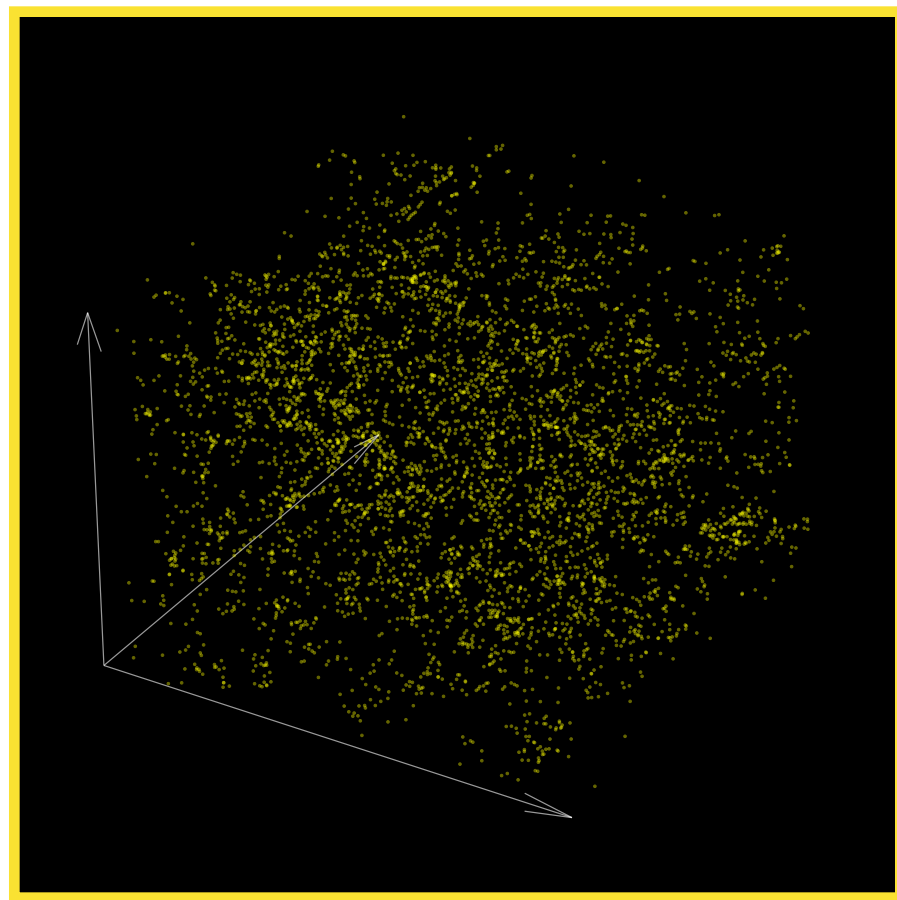
Intractable!

$$p(x|\theta)$$



Intractable!

Emulation and inference



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