

- **What we did:** Large scale structure simulations of 4 different cosmologies
- **What you got:** 16 files, 4 linear power spectra (all at $z=0$), 4 nonlinear power spectra, 4 mass functions, 4 “pretty pictures”
- **In addition:** 4 sets of cosmological parameters
- **Tasks:**
 - Look at 4 parameter sets and identify the different physics included in the 4 different simulations
 - Think about what these different physics effects would do to the power spectrum, the mass function etc.
 - Assign one linear $P(k)$, one nonlinear $P(k)$, one mass function, one “pretty picture” to each cosmology
 - Write down for each model, which files belong to it (hand in your results)
 - Vote for a “spokes person” to present your results and explain how you derived your conclusions

M000

$\Omega_{\text{CDM}} = 0.2642$
 $\omega_b = 0.02222$
 $\Omega_{\text{nu}} = 0.0$
 $H_0 = 0.6731$
 $\sigma_8 = 0.829$
 $n_s = 0.9655$
 $w_0 = -1.0$
 $w_a = 0.0$

M001

$\Omega_{\text{CDM}} = 0.950956$
 $\omega_b = 0.02222$
 $\Omega_{\text{nu}} = 0.0$
 $H_0 = 0.6731$
 $\sigma_8 = 0.829$
 $n_s = 0.9655$
 $w_0 = -1.0$
 $w_a = 0.0$

M002

$\Omega_{\text{CDM}} = 0.2421$
 $\omega_b = 0.02222$
 $\Omega_{\text{nu}} = 0.02207$
 $H_0 = 0.6731$
 $\sigma_8 = 0.829$
 $n_s = 0.9655$
 $w_0 = -1.0$
 $w_a = 0.0$

M003

$\Omega_{\text{CDM}} = 0.2642$
 $\omega_b = 0.02222$
 $\Omega_{\text{nu}} = 0.0$
 $H_0 = 0.6731$
 $\sigma_8 = 0.829$
 $n_s = 0.9655$
 $w_0 = -0.7$
 $w_a = 0.67$

Group, points	M000	M001	M002	M003
1, 9	wmae	mexi	lobt	cssp
2, 8	wosp	mexe	lsbi	cmat
3, 8	wmae	mexi	pssp	cobt
4, 5	ws p	ce i	lo t	mm e
5, 5	wobt	mmxe	cesi	lsab
6, 4	wsbp	lmxt	mes i	coa e
7, 5	cms	mex	wsb	loa
8, 9	coap	mext	lsbi	wmse
9, 11	coap	mexi	lsse	wmbt
answer	cobe	mexi	lsst	wmap