

### **CAMB Web Interface**

Most of the configuration documentation is provided in the sample parameter file provided with the application.

#### **Supports the April 2014 Release**

This form uses JavaScript to enable certain layout features, and it uses Cascading Style Sheets to control the layout of all the form components. If either of these features are not supported or enabled by your browser, this form will NOT display correctly.

Descriptive information for the CAMB parameters can be found at: http://cosmologist.info/notes/CAMB.pdf

#### Actions to Perform

<ul> <li>✓ Scalar C<sub>l</sub>'s</li> <li>✓ Vector C<sub>l</sub>'s</li> <li>Tensor C<sub>l</sub>'s</li> </ul>	<ul><li>□ Do Lensing</li><li>☑ Transfer Functions</li></ul>	<ul> <li>■ Linear</li> <li>■ Non-linear</li> <li>Matter Power</li> <li>(HALOFIT)</li> <li>■ Non-linear</li> <li>CMB Lensing</li> <li>(HALOFIT)</li> <li>■ Non-linear</li> <li>Matter Power and</li> <li>CMB Lensing</li> <li>(HALOFIT)</li> </ul>	None ▼ Sky Map Output
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- Vector C<sub>I</sub>'s are incompatible with Scalar and Tensor C<sub>I</sub>'s. The Transfer functions require Scalar and/or Tensor C<sub>I</sub>'s.
- The HEALpix synfast program is used to generate maps from the resultant spectra. The random number seed governs the phase of the a<sub>lm</sub>'s generated by synfast. The default of zero causes synfast to generate a new see from the system time with each run. Specifying a fixed nonzero value will return fixed phases with successive runs.

## Maximum Multipoles and k\*eta

Scalar		Tensor	
2200	I <sub>max</sub>	1500	I <sub>max</sub>
4000	k*eta <sub>max</sub>	3000	k*eta <sub>max</sub>

• Tensor limits should be less than or equal to the scalar limits.

# Cosmological Parameters

Use Physical Parameters? No ▼ 0.0445 0.24

70 Hubble Constant Ω<sub>baryon</sub> Fraction

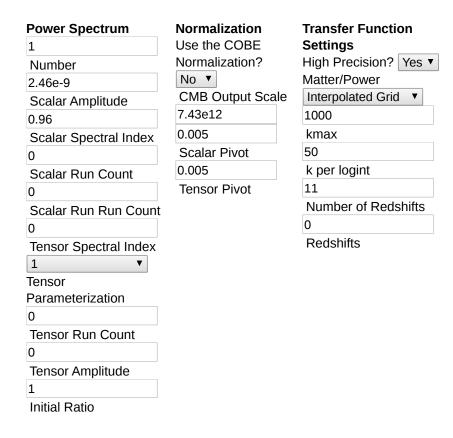
Helium

2.7255 T<sub>cmb</sub>

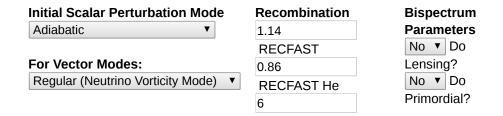
0.246	$\Omega_{\text{cdm}}$	2.046
0.7095		Massless Neutrinos
$\Omega_{lambda}$		1
0		Massive Neutrinos
$\Omega_{neutrino}$	J	-1
		Eqn. of State
		1
		Comoving Sound Speed
		Yes ▼
		Share AN <sub>2044</sub>

- The Equation of State entry is the effective equation of state parameter for dark energy and is assumed constant.
- The Comoving Sound Speed parameter is the constant comoving sound speed of the dark energy; 1=quintessence.
- Setting Degeneracies to zero sets the mass degeneracies parameter to massive neutrinos. Otherwise this should be a space separated list of values, one per eigenstate.
- Fractions should be a space separated list indicating the fraction of  $\Omega_v h^2$  accounted for by each eigenstate.

Reionization		
Include Reionization?	No	•



- The ratio is that of the initial tensor/scalar power spectrum amplitudes. The vector modes use the scalar settings.
- Supply 'Number' values in each after the first, separated by spaces.
- To get  $\mu$ K<sup>2</sup>, set a realistic initial scalar amplitude (e.g., 2.3e-9) and the output scale factor to ~7.43e12; for dimensionles transfer functions, set scalar amp to 1 and the output scale factor to 1.<.li>
- kmax=0.5 is enough for sigma\_8. Each redshift must be supplied, separated by spaces. They will be sorted into descending order.



RECFAST He Switch

Yes

▼

RECFAST H Switch

- Bispectrum: Primordial is currently only a local model (fnl=1) and can take several minutes to run. Lensing is fairly quick.
- Separate the Bispectrum delta values with spaces.

## Performance and Reporting Parameters

Feedback Level Print ▼				
Lensing Method				
Curved Correlation Function ▼			▼	
Accurate BB	No	•		
Accurate EE	No	•		

Tensor Neutrinos No ▼	
Massive Neutrino Approx	
Integrate Distribution Function ▼	
Accurate Polarization Yes ▼	
Truncate late radiation heirarchies	Yes ▼

1	Accuracy
Boost	
1	'l' Accuracy
Boost	
1	'l' Sample
Roost	

- Massive Neutrino Approximation: The series velocity weight option: switch to this approximation once non-relativistic. The fast approximation scheme is a CMB-only option, accurate for light neutrinos.
- Accurate EE: Set to yes if you are bothered about percent accuracy on EE from reionization.
- Tensor Neutrinos: Indicates whether or not to include neutrinos in the tensor evolution equations.
- Truncate late radiation heirarchies: Indicates whether or not to turn off small-scale late tume radiation heirarchies. This is a time versus accuracy tradeoff.
- Accuracy Boosts: Higher numbers improve accuracy by reducing time steps.

Go!

Reset

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