Solution of the σ_8 exercise

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Modifications of input.h

input.h

```
enum target_names {theta_s, Omega_dcdmdr,
    omega_dcdmdr, Omega_scf, Omega_ini_dcdm,
    omega_ini_dcdm, tn_sigma8};
enum computation_stage {cs_background,
    cs_thermodynamics, cs_perturbations,
                        cs_primordial, cs_nonlinear,
                            cs_transfer, cs_spectra};
#define _NUM_TARGETS_ 7 //Keep this number as number
    of target_names
```

Modifications of input.c

input.c

```
/** These two arrays must contain the strings of
    names to be searched
    for and the coresponding new parameter */
char * const target_namestrings[] = {"100*theta_s",
    "Omega_dcdmdr","omega_dcdmdr","Omega_scf","
    Omega_ini_dcdm","omega_ini_dcdm","sigma8"};
char * const unknown_namestrings[] = {"h","
    Omega_ini_dcdm","Omega_ini_dcdm","
    scf_shooting_parameter","Omega_dcdmdr","
    omega_dcdmdr","A_s"};
enum computation_stage target_cs[] = {
    cs_thermodynamics, cs_background, cs_background
    ,cs_background, cs_background, cs_background,
    cs_spectra};
```

Modifications of input.c

In function input_try_unknown_parameters()

```
if (flag == _TRUE_)
  input_verbose = param;
else
  input_verbose = 0;

/** Optimise flags for sigma8 calculation.*/
pt.k_max_for_pk=1.0;
pt.has_pk_matter=_TRUE_;
pt.has_perturbations = _TRUE_;
pt.has_cl_cmb_temperature = _FALSE_;
pt.has_cls = _FALSE_;
pt.has_cl_cmb_polarization = _FALSE_;
pt.has_cl_cmb_lensing_potential = _FALSE_;
pt.has_cl_number_count = _FALSE_;
pt.has_cl_lensing_potential=_FALSE_;
pt.has_density_transfers=_FALSE_;
pt.has_velocity_transfers=_FALSE_;
```

Modifications of input.c

In function input_try_unknown_parameters()

```
case tn_sigma8:
  output[i] = sp.sigma8-pfzw->target_value[i];
  break;
```

In function input_get_guess()

```
case tn_sigma8:
  /* Assume linear relationship between A_s and
      sigma8 and fix coefficient
     according to vanilla LambdaCDM. Should be
         good enough... */
  xguess[index_guess] = 2.43e-9/0.87659*pfzw->
      target_value[index_guess];
  dxdy[index_guess] = 2.43e-9/0.87659;
  break;
```

Test ini-file

In function `sigma8test.ini`

```
output =tC,mPk
sigma8 = 0.9
P_k_max_1/Mpc = 1.

input_verbose = 1
background_verbose = 1
thermodynamics_verbose = 1
perturbations_verbose = 1
transfer_verbose = 1
primordial_verbose = 1
spectra_verbose = 1
nonlinear_verbose = 1
```