Sensitivity Analysis for Homogeneous Reactors

- **SensAnalReac** TRUE or FALSE. Analysis done by changing the reaction rates one at a time

- **SensAnalSpec** TRUE or FALSE. Analysis done by removing one species at a time

- **FirstSensRate** Integer less than the number of reactions or species in the system

  - FirstSensRate = 10: Skip the first 10 reactions or species

- **SensMax** TRUE or FALSE. Analysis on maximum values of mass fractions and on the time when these maxima occur

- **SensFinal** TRUE or FALSE. Analysis on final values of mass fractions

- **SensObj** Any species present in the system

  - SensObj is OH: Write sensitivity coefficients for OH species

- **SensObjAll** TRUE or FALSE. Write sensitivity coefficients for all species in system

- **SensAnalFac** Any real number, except 1

  - SensAnalFac = 2.0: multiply the reaction's pre-exponential factor by 2 and compute the coefficients
  - SensAnalFac = 0.0: remove the reaction and compute the coefficients

- Sensitivity Coefficients in reaction analysis:

$$SC = \frac{A^0}{X^0} \frac{X - X^0}{A - A^0}$$

  with A: pre-exponential factor

- Sensitivity Coefficients in species analysis:

$$SC = \frac{X - X^0}{X^0}$$

ExactBackward option is not compatible with sensitivity analysis on reaction rates. Sensitivity analysis on temperature and ignition delay time is always done.