

# Metabolic Control Analysis in ScrumPy

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# Model.ScaledSensits()

ScrumPy provides the general sensitivity analysis method `m.ScaledSensits()` with two mandatory and three optional arguments:

```
m.ScaledSensits(  
    pname,          # The parameter to be perturbed,  
    Vars,           # List of variables affected,  
    Scaled = True  # Set to False for unscaled.  
    SS           = True # Set to False for instantaneous.  
    Pert        = 0.001 # Relative delta p.  
)
```

# Model.ScaledSensits()

- If pname is a Vmax and Vars are reaction names we obtain flux control coefficients.
- If pname is a Vmax and Vars are metabolite names we obtain concentration control coefficients.
- If pname is a concentration, Vars are reaction names and SS=False we obtain elasticities.

```
from Data import DataSets
ds = DataSets.DataSet(ItemNames = ["K1_S", "CJ1", "CJ4"]
>>> ds.NewRow([1,2,3])
>>> print ds
      A B C
row1 1.0 2.0 3.0
```