

LENSTRONOMY

LensModel

mass profiles

[any]

LightModel

light profiles

'STARLETS'

PointSource

e.g. quasar images

'LENSED_POSITION'

classic solver

*linear
parameters*

*non-linear
parameters*

all profiles
amplitudes

remaining
parameters

sparse solver

*linear
parameters*

*non-linear
parameters*

pixel values

point source
amplitudes

remaining
parameters

**source grid
offsets**

fitting sequence

optimisation

PSO

downhill

simplex

sampling

MCMC

nested

sampling

SLITRONOMY

source
light
profile
?

lens
light
profile
?

point
sources
?

SparseSolverSourcePS

SparseSolverSource

SparseSolverSourceLens

1. Initialisation steps / good guess provided
2. Reweighting loop
3. Main loop
 4. **Source light optimisation loop**
 5. **Gradient descent update**
 6. **Enforce sparsity in starlet space**
 7. **Enforce positivity**
 8. **Update regularisation strength**
9. Lens light optimisation loop
10. [analogous to 5 – 8]
11. Update weights
12. Finalisation steps