

Fitting a Light Curve in 3ML with Template Models

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Template Models in 3ML

- **TemplateModelFactory** as implemented in astromodels
 - Uses a library with a designated grid in parameter space
 - Constructs a model from that grid applying linear or logarithmic interpolation
 - Model is stored as HDF5 for easy accessibility
- Useful for models from numerical simulations
- For fitting the constructed model can be used
 - → Computation time is saved for modelling with time consuming simulations
 - → Unknown simulation code can be used right away

Application on LC Code

- Light curve code XRbinary(Bayless et al., 2011) for binary systems
- Ray tracing, irradiation and complicated geometry of system implemented
- Define grid for model and create library of simulations
- Model for 3ML is created that can be used for analysis

Simultaneous Fitting to GROND Data

- GROND observations in seven filter bands simultaneously (optical/NIR) (XYLike plugin into 3ML)
- Use linking capability of 3ML to construct joint model
- Eventually joint fit of all light curves using emcee and **MULTINEST**

