Notes for Pancoast et al. "GEOMETRIC AND DYNAMICAL MODELS OF REVERBERATION MAPPING DATA"

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1. Article

Kozłowski et al. (2010)
Zu et al. (2010)

To interpolate between data points in the time series linear interpolation is the simplest, but it does not give us an estimate of the uncertainty in the interpolation. To account for this, we consider the entire continuum function $f_{cont}(t)$ to be an unknown parameter to be inferred from the data. The prior distribution for $f_{cont}(t)$ is a Gaussian Process. The function f(t) can be parameterized by 500 variables with standard normal priors. The hyperparameters for the continuum model are taken from the lick monitoring project for the object Arp 151.

It is important to set appropriate prior probability distributions for each model parameter. For parameters where we know the order of magnitude of the parameter value we use a flat prior in the parameter. For parameters where we do not know the order of magnitude of the parameter value we need a prior that treats many orders of magnitude equally, so we use a flat prior in the log of the parameter.