

Comparison chart

Written by [Pavel Sobolev](#) and located [here](#). Release version: **0.8.0**.

KIC – ID from [Kepler Input Catalog](#);

KID – Kernel Identifier;

KL – Kernel Link ([george](#));

CNL – Notebook Link ([celerite](#));

GNL – Notebook Link ([george](#));

TP – Value of the period of a star [days]
from table 3 from [Mathur et al. \(2014\)](#);

IP – Inferred value of the period [days] obtained by
minimizing the negative marginalized likelihood;

LF – Value of the likelihood function

KIC	KID	KL	CNL	GNL	TP	IP	LF
1430163	Base	—	link	—	3.88 ± 0.58	3.8616782074415545	11569.731327537733
	DS	—	link	—		3.862409454622822	11569.731268360863
	DSS	link	—	link		4.025972513638813	9795.464897296839
	BaseN	—	link	—		3.7612323279620403	11537.419932869527
	DSN	—	link	—		3.8613967998546928	11569.730904214402
	DSSN	link	—	link		4.096826429847693	11640.772932935852

Base

$$k(\tau) = \frac{a}{2+b} e^{-\tau/c} \left[\cos\left(\frac{2\pi\tau}{P}\right) + (1+b) \right]$$

Parameters:

a \longrightarrow log_amp;

b \longrightarrow factor;

c \longrightarrow log_timescale;

P \longrightarrow log_period;

Bounds:

log_amp: (-10.0, 0.0);

factor: (-1.0, 0.0)

log_timescale: (0.0, 2.5);

log_period: (-3.0, 5.0);

DS

$$k(\tau) = Ae^{-a\tau} \cos\left(\frac{2\pi\tau}{P}\right)$$

Parameters:

A \longrightarrow log_amp;

a \longrightarrow log_a;

P \longrightarrow log_P;

Bounds:

log_amp: (-5.0, 0.0);

log_a: (-5.0, 0.0);

log_P: (-3.0, 5.0)

DSS

$$k(\tau) = Ae^{-a\tau^2} \cos\left(\frac{2\pi\tau}{P}\right)$$

Parameters:

A \longrightarrow amp;

a \longrightarrow a;

P \longrightarrow P;

Bounds:

amp: (0.0025, 1.0);

a: (0.0, 50.0);

P: (2.5, 10.0)

BaseN

$$k(\tau) = \frac{a}{2+b} e^{-\tau/c} \left[\cos\left(\frac{2\pi\tau}{P}\right) + (1+b) \right] + F e^{-\tau/f}$$

Parameters:

a \longrightarrow log_amp;

b \longrightarrow factor;

c \longrightarrow log_timescale;

P \longrightarrow log_period;

F \longrightarrow log_famp;

f \longrightarrow log_ftimescale;

Bounds:

log_amp: (-10.0, 0.0);

factor: (-1.0, 0.0);

log_timescale: (0.0, 2.5);

log_period: (-3.0, 5.0);

log_famp: (-5.0, 12.0);

log_ftimescale: ; (2.0, 20.0)

DSN

$$k(\tau) = Ae^{-a\tau} \cos\left(\frac{2\pi\tau}{P}\right) + Fe^{-\tau/f}$$

Parameters:

A \longrightarrow log_amp;

a \longrightarrow log_a;

P \longrightarrow log_p;

F \longrightarrow log_F;

f \longrightarrow log_f;

Bounds:

log_amp: (-5.0, 0.0);

log_a: (-5.0, 0.0);

log_p: (-3.0, 5.0)

log_F: (-20.0, 0.0)

log_f: (0.0, 10.0)

DSSN

$$k(\tau) = Ae^{-a\tau^2} \cos\left(\frac{2\pi\tau}{P}\right) + Be^{-b\tau}$$

Parameters:

A \longrightarrow amp;

a \longrightarrow a;

B \longrightarrow bmp;

b \longrightarrow b;

P \longrightarrow p;

Bounds:

amp: (0.0025, 1.0);

a: (0.0, 5.0);

bmp: (0.0, 1.0)

b: (0.0, 50.0)

p: (2.5, 5.0)