

# Software Failure and Reliability Assessment Tool: Report

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## Tab 1: Select, Apply, and Analyze Data

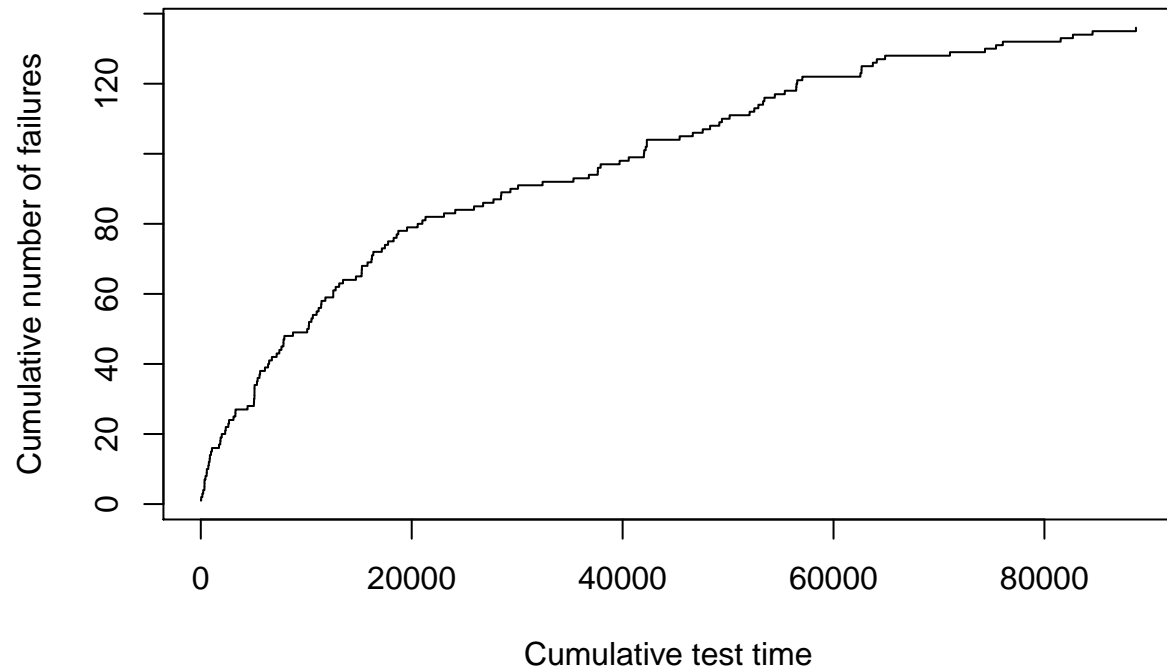
Sample of the updated data ('SYS1') in different formats:

Table 1: First ten points of the input data

FN	IF	FT
1	3	3
2	30	33
3	113	146
4	81	227
5	115	342
6	9	351
7	2	353
8	91	444
9	112	556
10	15	571

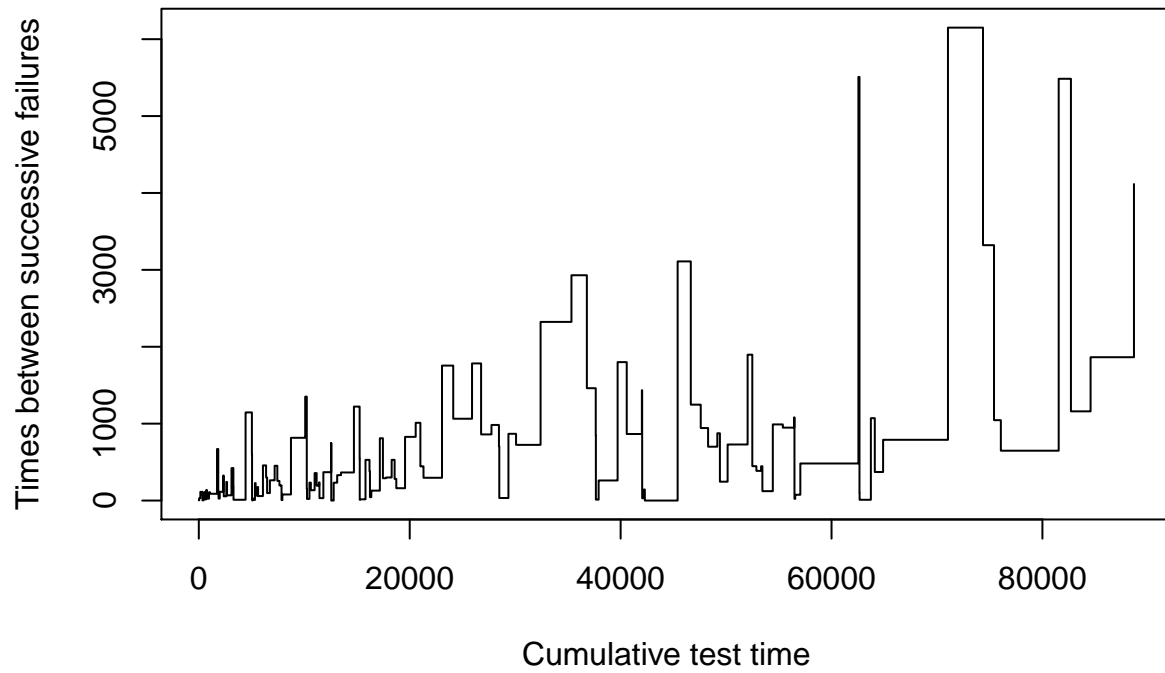
## Cumulative failures

Cumulative Failures vs. cumulative test time: SYS1



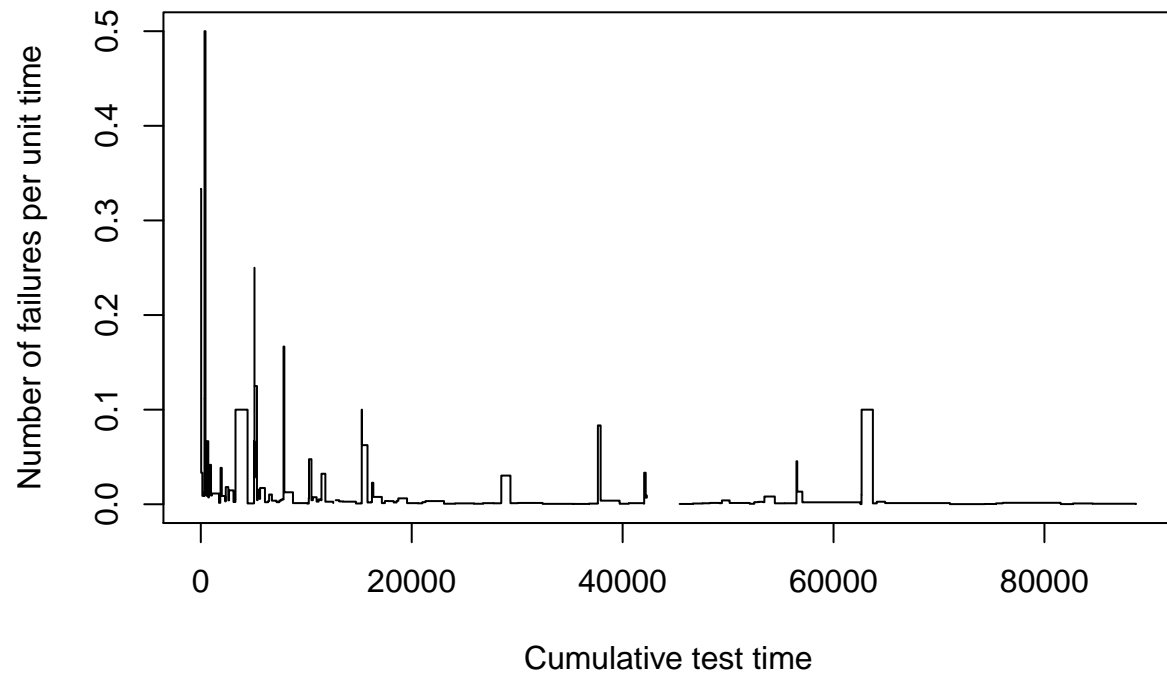
## Times between failures/Interfailure times

Interfailure times vs. cumulative test time: SYS1

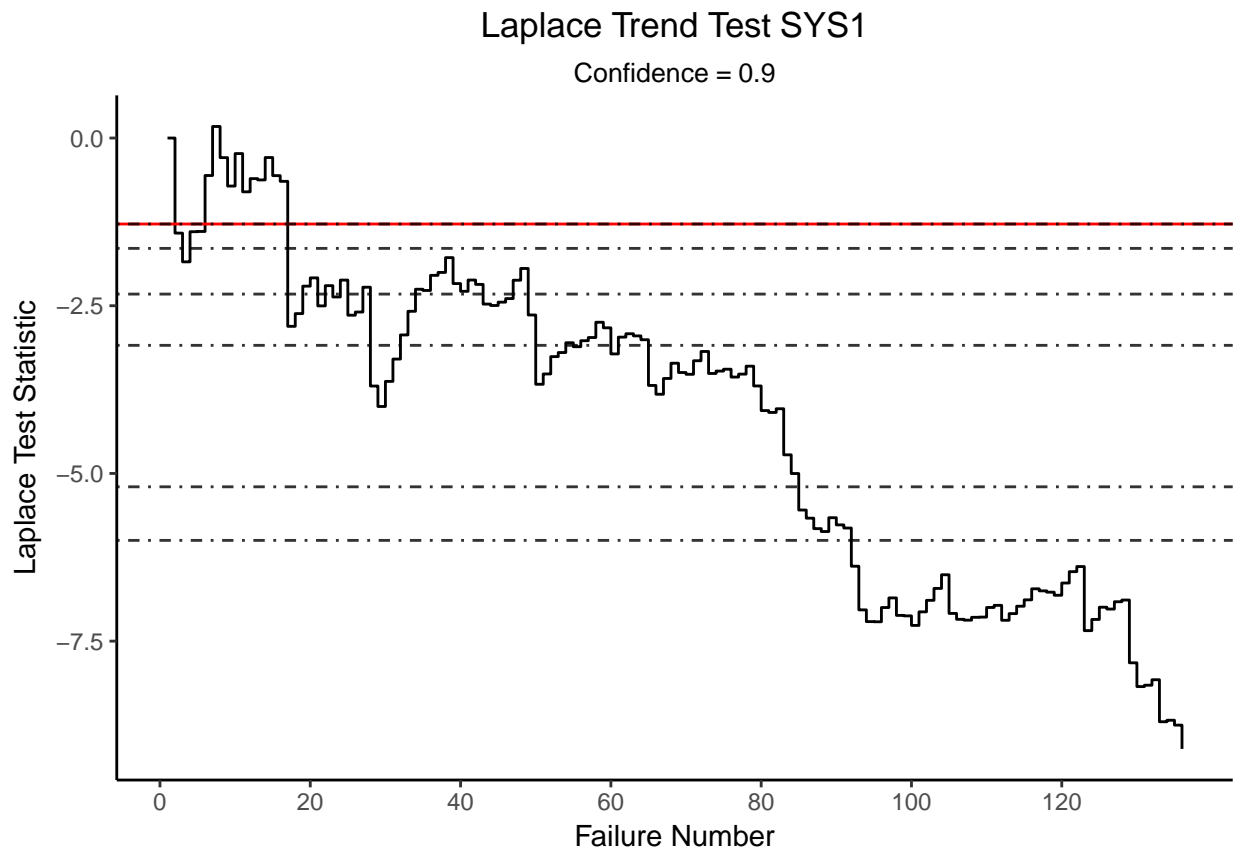


## Failure intensity

Empirical failure intensity vs. cumulative test time: SYS1

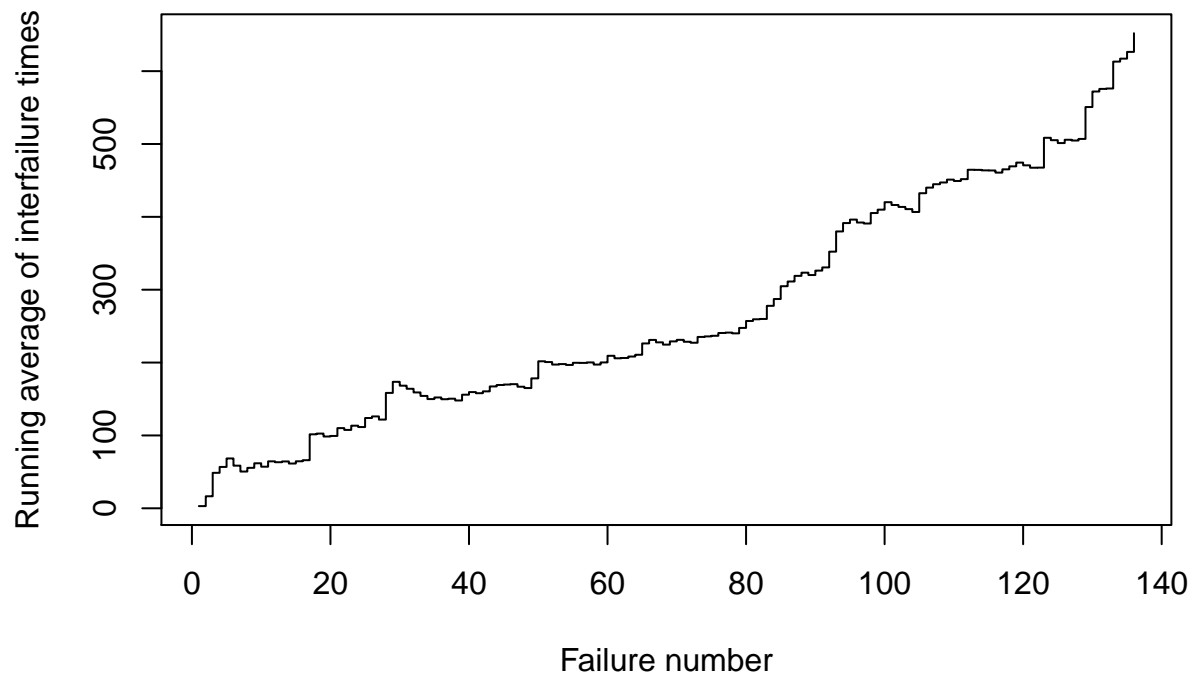


## Laplace Trend Test



## Running arithmetic average

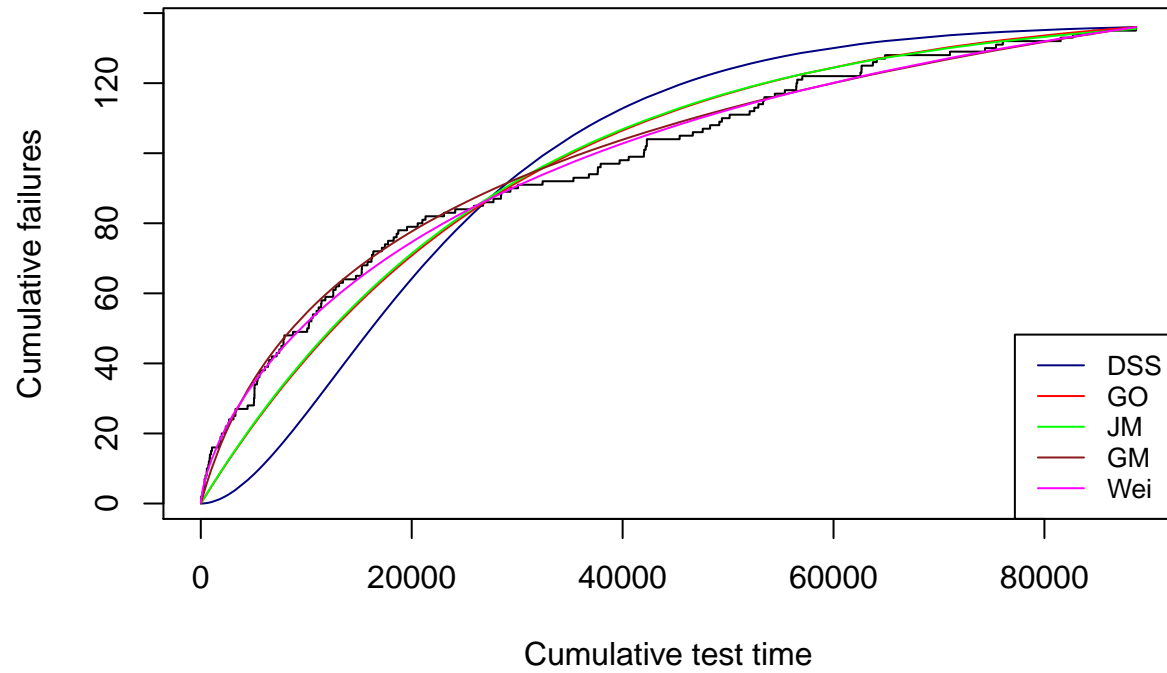
### Running arithmetic average test: SYS1



## Tab2: Set Up and Apply Models

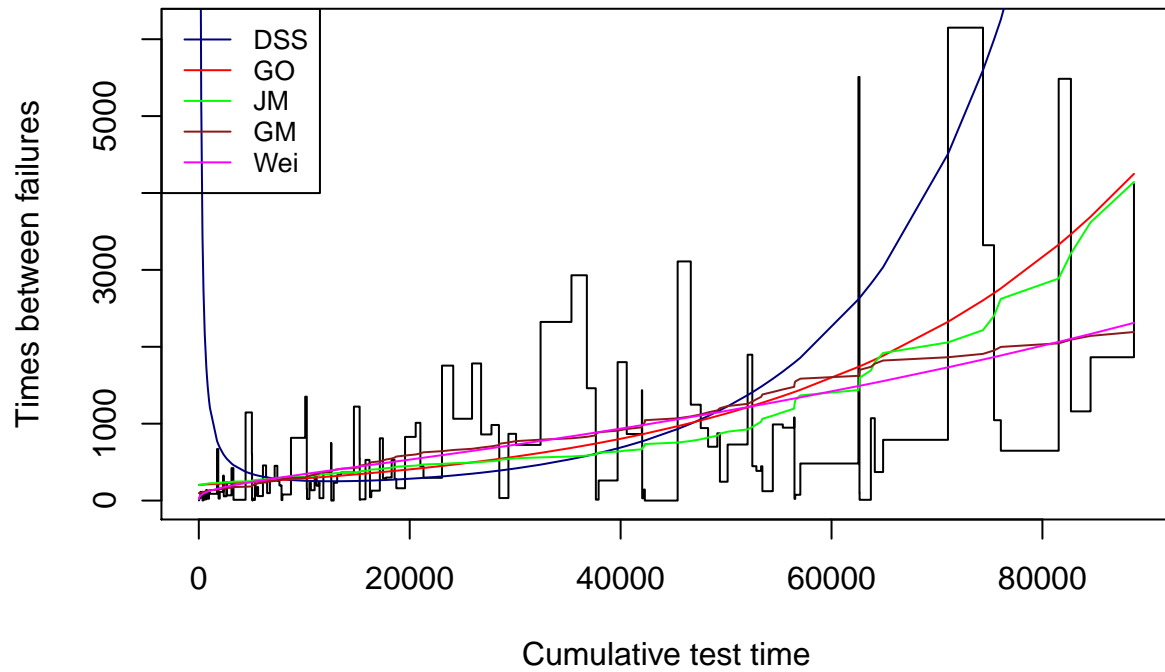
Cumulative failures

Cumulative failures vs. cumulative test time: SYS1



## Times between failures

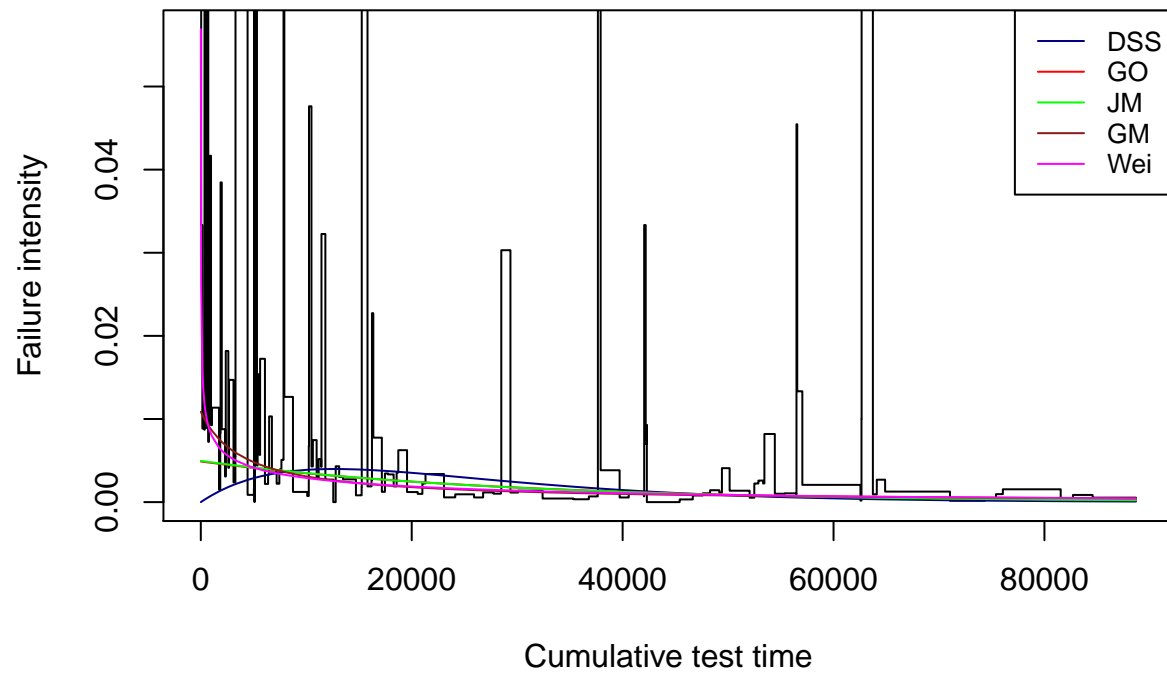
Times between failures vs. cumulative test time SYS1





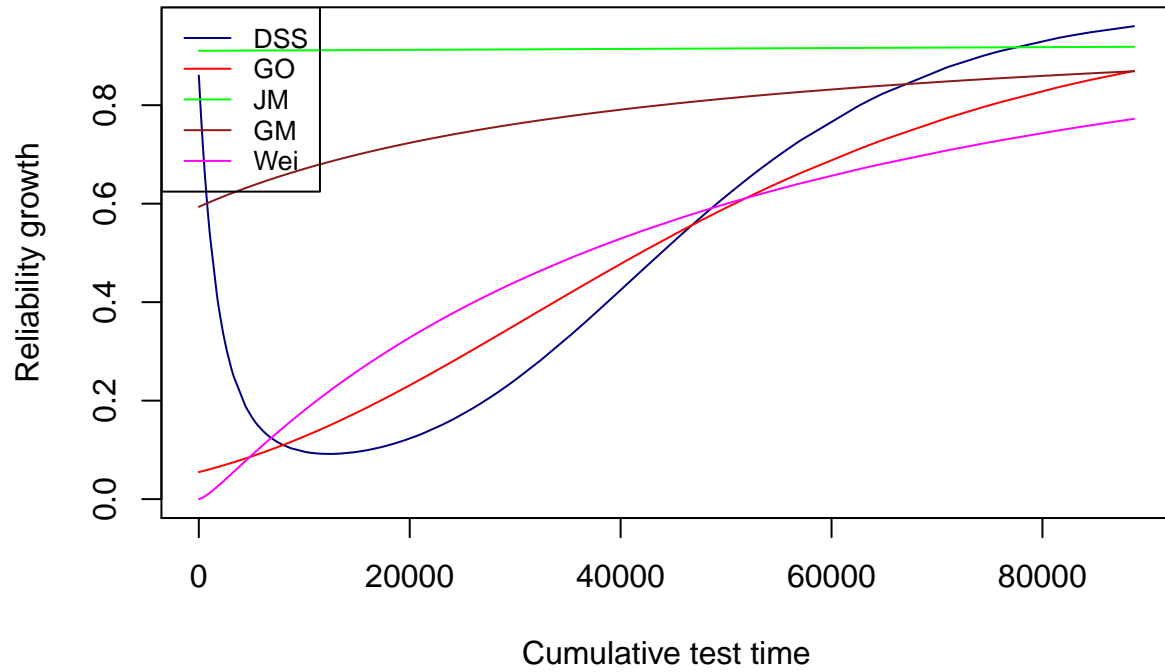
## Failure intensity

Failure intensity vs. Cumualtive test time SYS1



## Reliability growth

Reliability growth vs. cumulative test time SYS1



**Tab3: Query Model Results**

	Time to achieve specified reliability	Expected number of failures	Expected time to N failure
DSS	R = 0.9 achieved	0.246856262199799	NA
GO	8263.13681952821	0.903615409906593	10040.3808618466
JM	91142.2377161945	0.85612548252314	10742.5403828383
GM	153028.269493869	1.87747308675807	4390.88656760035
Wei	66732.9968495319	1.72595369956707	4793.97740413222

**Tab4: Evaluate Models**

	Akaike Information Criterion (AIC)	“Predictive sum of squares error (PSSE)” $\sim 0.9$
DSS	2075.15	296.35
GO	1953.61	23.07
JM	1950.53	*19.6
GM	*1937.03	84.33
Wei	1938.16	74.94

Smaller values of AIC and PSSE values are preferred.