

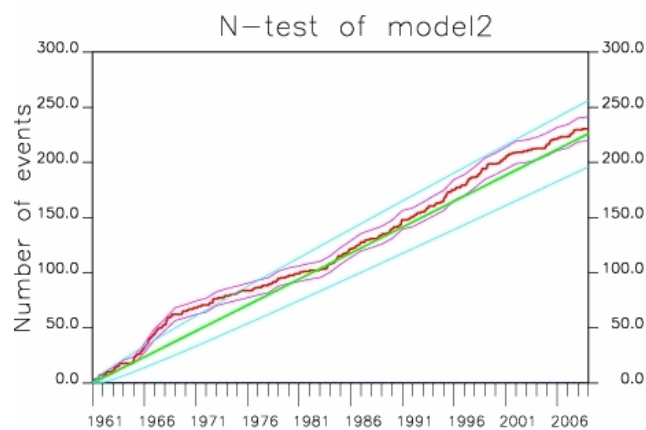
# Problems in L-,R-,N- and S-tests Caused by Parameter Uncertainties

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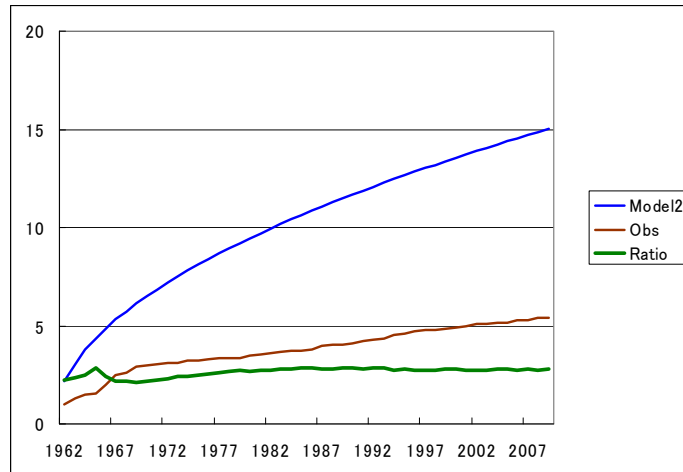
## N-test



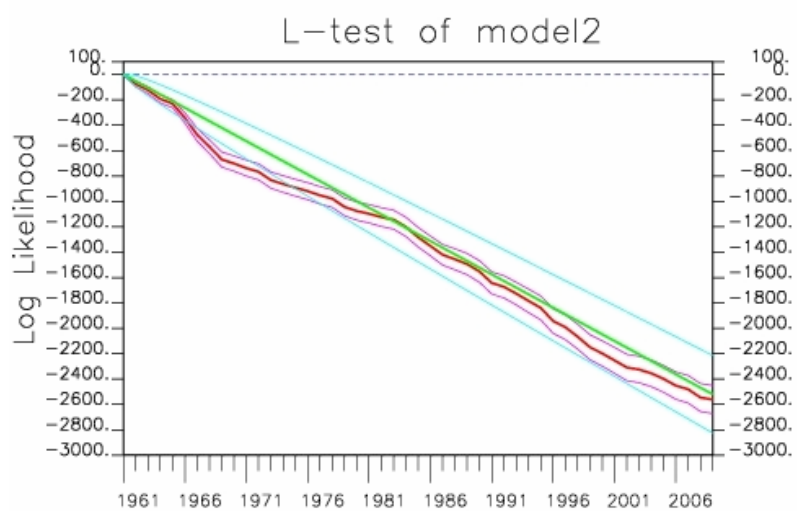
Red & Purple : observed number & 2 standard deviation ranges.  
Green & blue : expected from Model(VP4L) & 2 std ranges

## N-score: standard deviations

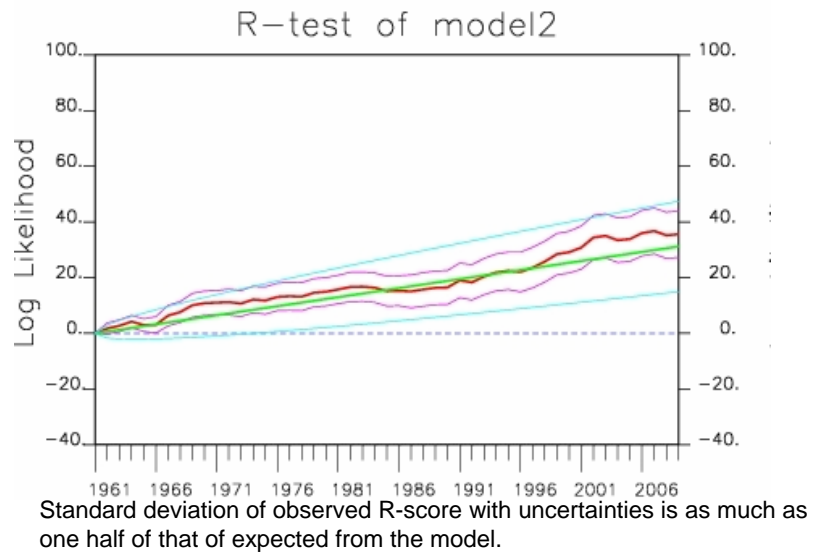
One standard deviation range expected from model is compared with that observed with uncertain parameters



## L-test



## R-test



## Partial Contribution from each event

Contribution/event	N event	Class Total
$0.99 \leq$	143	142.82
$0.7 \leq < 0.99$	34	31.78
$0.3 \leq < 0.7$	99	49.65
$0.01 \leq < 0.3$	74	5.79
$< 0.01$	84	0.50
<b>Total</b>	<b>434</b>	<b>230.53</b>
$5.0 \leq M$ within cells	229	209.45

## Summary

- N-score  $\sim 1/3$  of Std. expected from Model
- L-score  $\sim 1/3$ , depending on Model
- R-score  $\sim 1/2$ , depending on Model
- Total contribution mostly same  
whether we consider uncertainties or not  
Events within area (inc. M) contribute 90%