These are our first tries to fit ERGM-models. First approach: Try to fit a model suggested for starting by Robins and Lusher. Model does degenerate quickly. Thus we try to find statistics which are responsible for degeneration by extracting each term in a seperate model and check perfomance via mcmc.diagnostics.

Tabelle 1: ERGM-Terms suggested by Robins and Lusher and the result of their mcmc.diagnostics

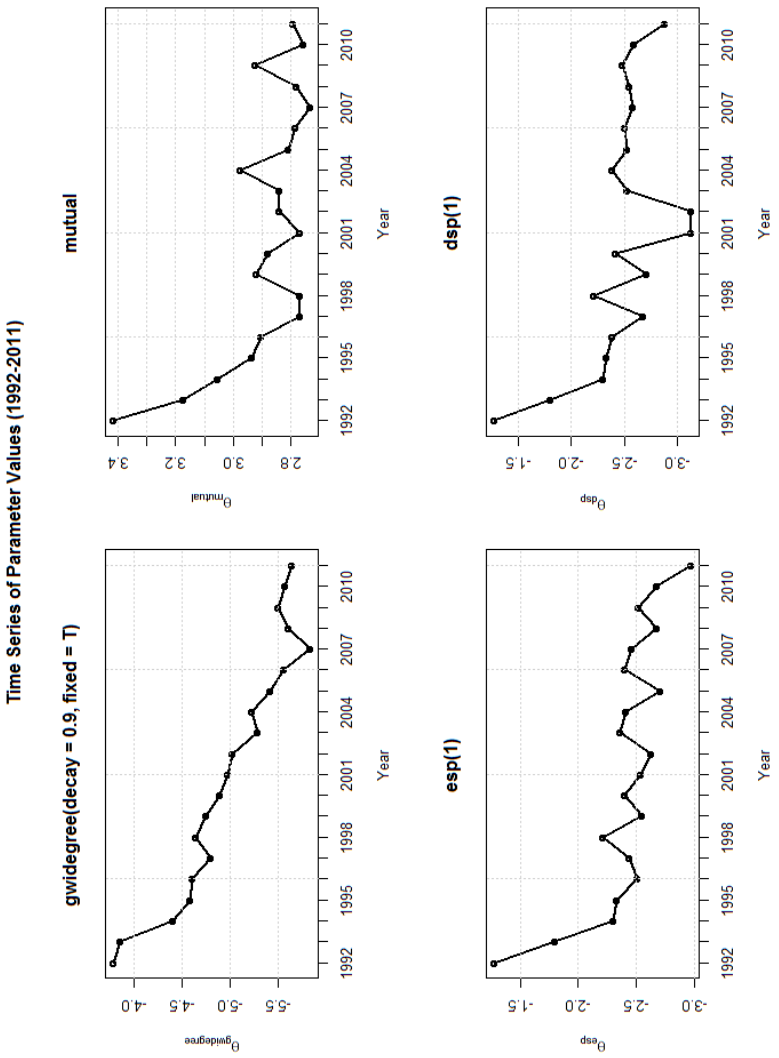
ergm-term	mcmc.diagnostics
edges	works
mutual	works
gwidegree(decay, fixed = TRUE)	works only with decay near one
gwodegree(decay, fixed = TRUE)	degenerates
gwdsp(fixed = TRUE)	works, long computation time
gwesp(fixed = TRUE)	works, long computation time
ctriple	degenerates

Now we try to find some terms which can replace the terms wich are degenerating or have long computational time. Idea is to combine alle terms which are working fine in new model.

Tabelle 2: Replacement for ERGM-Terms

ergm-term	mcmc.diagnostics
ostar(2)	degenerates
dsp(1)	works fine in most years
esp(1)	works fine in most years

- Combining statistics leads to long computing time
- thats why we try to estimate parameters for single statistics (formular: edge + ergm-term)
- time series(1992-2011) for parameter values of:
  - mutual,
  - gwindegree(decay = 0.9, fixed = T),
  - esp(1),
  - dsp(1)


Time Series of Parameter Values (1992-2011)
gwidegree(decay = 0.9, fixed = T)
mutual
esp(1)
dsp(1)
Year
1992
1995
1998
2001
2004
2007
2010