

Effect of No burn-in and no lag:

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Ran with Niter: 500 burn-in: 0 lag: 0
5 most freq words for topic 0: mission hst shuttle solar pat
5 most freq words for topic 1: edu gif uci ics incoming
5 most freq words for topic 2: bill moon internet science back
5 most freq words for topic 3: henry toronto spencer zoo svr
5 most freq words for topic 4: mars time large ship propulsion
5 most freq words for topic 5: engine turbo toyota small seat
5 most freq words for topic 6: don cost want blah saturn
5 most freq words for topic 7: edu writes article apr john
5 most freq words for topic 8: book price make dealer auto
5 most freq words for topic 9: space nasa sci world long
5 most freq words for topic 10: oil service come change lights
5 most freq words for topic 11: sky light george people rights
5 most freq words for topic 12: insurance mustang geico camaro article
5 most freq words for topic 13: article apr writes engines edu
5 most freq words for topic 14: clutch shifter sho don car
5 most freq words for topic 15: system earth oort etc day
5 most freq words for topic 16: car ford probe speed miles
5 most freq words for topic 17: cars diesels heard emissions matter
5 most freq words for topic 18: make even two good point
5 most freq words for topic 19: station launch option shuttle redesign
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Ran with Niter: 1000 burn-in: 0 lag: 0
5 most freq words for topic 0: writes edu oort system ray
5 most freq words for topic 1: edu gif uci ics incoming
5 most freq words for topic 2: sky light rights point people
5 most freq words for topic 3: clutch shifter sho shift car
5 most freq words for topic 4: car book auto blue cost
5 most freq words for topic 5: edu internet mustang article writes
5 most freq words for topic 6: car ford probe feel driving
5 most freq words for topic 7: etc earth day planets large
5 most freq words for topic 8: don make even two time
5 most freq words for topic 9: article writes edu apr engines
5 most freq words for topic 10: part mars spacecraft system propulsion
5 most freq words for topic 11: engine toyota small seat cars
5 most freq words for topic 12: mission hst shuttle solar pat
5 most freq words for topic 13: insurance geico edu good article
5 most freq words for topic 14: henry toronto spencer zoo svr
5 most freq words for topic 15: cars diesels heard matter emissions
5 most freq words for topic 16: bill moon back george support
5 most freq words for topic 17: oil service come change lights
5 most freq words for topic 18: station launch option redesign shuttle
5 most freq words for topic 19: space nasa sci world long
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Ran with Niter: 2000 burn-in: 0 lag: 0
5 most freq words for topic 0: henry toronto spencer zoo svr
5 most freq words for topic 1: don cost saturn want years
5 most freq words for topic 2: sky light night satellite people
5 most freq words for topic 3: car ford probe speed miles
5 most freq words for topic 4: edu gif uci ics nasa
5 most freq words for topic 5: space bill moon internet science
5 most freq words for topic 6: station launch option space shuttle
5 most freq words for topic 7: system part mars spacecraft nasa
5 most freq words for topic 8: insurance geico good state radar
5 most freq words for topic 9: etc earth day planets question
5 most freq words for topic 10: book don auto make blue
5 most freq words for topic 11: mission hst shuttle solar pat
5 most freq words for topic 12: edu article writes apr engines
5 most freq words for topic 13: engine power turbo steering audi
5 most freq words for topic 14: clutch car shifter sho shift
5 most freq words for topic 15: time large don make even
5 most freq words for topic 16: diesels cars people heard george
5 most freq words for topic 17: oil service come change lights
5 most freq words for topic 18: edu writes article oort mustang
5 most freq words for topic 19: cars manual small toyota seat
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Ran with Niter: 5000 burn-in: 0 lag: 0
5 most freq words for topic 0: station launch option shuttle redesign
5 most freq words for topic 1: clutch shifter sho don shift
5 most freq words for topic 2: writes edu oort system ray
5 most freq words for topic 3: car ford probe speed miles
5 most freq words for topic 4: space internet science nasa information
5 most freq words for topic 5: mission hst shuttle solar pat
5 most freq words for topic 6: part mars spacecraft system such
5 most freq words for topic 7: oil service come change lights
5 most freq words for topic 8: henry toronto spencer zoo svr
5 most freq words for topic 9: bill moon back time support
5 most freq words for topic 10: cost want saturn years book
5 most freq words for topic 11: don make people money two
5 most freq words for topic 12: sky light people rights night
5 most freq words for topic 13: engine power turbo steering torque
5 most freq words for topic 14: etc earth day large planets
5 most freq words for topic 15: edu article writes apr engines
5 most freq words for topic 16: insurance geico good article state
5 most freq words for topic 17: edu gif uci ics incoming
5 most freq words for topic 18: cars manual seat small toyota
5 most freq words for topic 19: edu george mustang blah writes
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Ran with Niter: 10000 burn-in: 0 lag: 0
5 most freq words for topic 0: etc earth day large planets
5 most freq words for topic 1: don writes make edu people
5 most freq words for topic 2: cost want book saturn years
5 most freq words for topic 3: car ford probe speed miles
5 most freq words for topic 4: engine power turbo steering audi
5 most freq words for topic 5: oil service come change lights
5 most freq words for topic 6: george mustang edu writes howell
5 most freq words for topic 7: sky light rights night people
5 most freq words for topic 8: clutch shifter sho car shift
5 most freq words for topic 9: cars diesels heard writes matter
5 most freq words for topic 10: science internet mars part information
5 most freq words for topic 11: edu writes article apr engines
5 most freq words for topic 12: bill system moon oort back
5 most freq words for topic 13: mission hst shuttle solar pat
5 most freq words for topic 14: station launch option shuttle redesign
5 most freq words for topic 15: cars manual small toyota seat
5 most freq words for topic 16: insurance geico good radar two
5 most freq words for topic 17: henry toronto spencer zoo svr
5 most freq words for topic 18: edu gif uci ics incoming
5 most freq words for topic 19: space nasa sci world long
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From here we find, Some topic (like cars, manual, small, toyota, seat) remains same or almost the same from the very first time. However, some topic words get a little bit reshuffled. It is not clear whether they make more sense or not as some topics defined here are not too common. However , the clusters seem more similar at iteration 5000 and 10000 than the clusters at iteration 500 and 10000 and they seem a little less sparsed. So it can be assumed, the topics are converging and doing some more iteration may give us some converging point.

Effect of Burn-In:

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Ran with Niter: 5000 burn-in: 100 lag: 0
5 most freq words for topic 0: george people don howell good
5 most freq words for topic 1: part mars nasa spacecraft space
5 most freq words for topic 2: henry toronto spencer zoo svr
5 most freq words for topic 3: edu gif uci ics incoming
5 most freq words for topic 4: writes system oort ray cloud
5 most freq words for topic 5: cars diesels heard matter emissions
5 most freq words for topic 6: sky light night rights bright
5 most freq words for topic 7: mission hst shuttle solar pat
5 most freq words for topic 8: oil service come change lights
5 most freq words for topic 9: cars small manual seat toyota
5 most freq words for topic 10: space bill moon internet science
5 most freq words for topic 11: engine power turbo steering audi
5 most freq words for topic 12: want make cost book don
5 most freq words for topic 13: insurance geico radar make two
5 most freq words for topic 14: car ford probe speed miles
5 most freq words for topic 15: clutch shifter sho don shift
5 most freq words for topic 16: etc large earth day time
5 most freq words for topic 17: station launch option shuttle space
5 most freq words for topic 18: article writes edu apr engines
5 most freq words for topic 19: edu writes article mustang camaro
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Ran with Niter: 5000 burn-in: 500 lag: 0
5 most freq words for topic 0: cars manual small seat toyota
5 most freq words for topic 1: don make want money book
5 most freq words for topic 2: cost want don saturn years
5 most freq words for topic 3: insurance good oort geico ray
5 most freq words for topic 4: station launch option shuttle redesign
5 most freq words for topic 5: henry toronto spencer zoo svr
5 most freq words for topic 6: car ford probe speed miles
5 most freq words for topic 7: edu gif uci ics incoming
5 most freq words for topic 8: space nasa gov sci world
5 most freq words for topic 9: mission hst shuttle solar pat
5 most freq words for topic 10: system part mars spacecraft propulsion
5 most freq words for topic 11: diesels cars heard emissions matter
5 most freq words for topic 12: engine power turbo steering audi
5 most freq words for topic 13: edu writes article apr mustang
5 most freq words for topic 14: clutch shifter car sho shift
5 most freq words for topic 15: oil service come change lights
5 most freq words for topic 16: bill moon internet back science
5 most freq words for topic 17: edu writes article apr engines
5 most freq words for topic 18: etc earth large day time
5 most freq words for topic 19: sky light people rights night
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Ran with Niter: 5000 burn-in: 200 lag: 0
5 most freq words for topic 0: george mustang blah howell camaro
5 most freq words for topic 1: car ford probe feel driving
5 most freq words for topic 2: system oort ray cloud gamma
5 most freq words for topic 3: mission hst shuttle solar pat
5 most freq words for topic 4: edu gif uci ics incoming
5 most freq words for topic 5: space bill moon sci back
5 most freq words for topic 6: insurance geico good radar two
5 most freq words for topic 7: cars manual toyota small seat
5 most freq words for topic 8: edu writes article apr engines
5 most freq words for topic 9: etc earth day large planets
5 most freq words for topic 10: car book cost want auto
5 most freq words for topic 11: sky light people rights night
5 most freq words for topic 12: science internet nasa mars information
5 most freq words for topic 13: cars diesels heard engine matter
5 most freq words for topic 14: station launch option shuttle redesign
5 most freq words for topic 15: henry toronto spencer zoo high
5 most freq words for topic 16: oil service come change lights
5 most freq words for topic 17: don make even time large
5 most freq words for topic 18: engine clutch shifter sho shift
5 most freq words for topic 19: edu writes article apr want
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```
Ran with Niter: 5000 burn-in: 1000 lag: 0
5 most freq words for topic 0: edu gif uci ics incoming
5 most freq words for topic 1: book cost want saturn auto
5 most freq words for topic 2: diesels cars george heard matter
5 most freq words for topic 3: oil service come change lights
5 most freq words for topic 4: space science internet information world
5 most freq words for topic 5: station launch option shuttle redesign
5 most freq words for topic 6: don make people want money
5 most freq words for topic 7: sky light rights night uiuc
5 most freq words for topic 8: writes edu article apr engines
5 most freq words for topic 9: car ford probe speed miles
5 most freq words for topic 10: insurance geico good radar companies
5 most freq words for topic 11: mission hst shuttle solar pat
5 most freq words for topic 12: henry toronto spencer zoo svr
5 most freq words for topic 13: edu writes article mustang camaro
5 most freq words for topic 14: bill moon back time support
5 most freq words for topic 15: etc earth day planets question
5 most freq words for topic 16: engine power turbo steering audi
5 most freq words for topic 17: clutch shifter sho car don
5 most freq words for topic 18: cars manual seat toyota small
5 most freq words for topic 19: system mars oort part spacecraft
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Ran with Niter: 5000 burn-in: 2000 lag: 0
5 most freq words for topic 0: station launch option shuttle redesign
5 most freq words for topic 1: mustang george blah howell edu
5 most freq words for topic 2: oil service come change lights
5 most freq words for topic 3: car ford probe find cars
5 most freq words for topic 4: mission hst shuttle solar pat
5 most freq words for topic 5: car clutch shifter sho shift
5 most freq words for topic 6: henry toronto spencer zoo svr
5 most freq words for topic 7: don make time writes find
5 most freq words for topic 8: writes edu oort system ray
5 most freq words for topic 9: edu gif uci ics incoming
5 most freq words for topic 10: etc earth day planets large
5 most freq words for topic 11: engine turbo power small toyota
5 most freq words for topic 12: space science internet information world
5 most freq words for topic 13: sky bill moon light rights
5 most freq words for topic 14: people good point money even
5 most freq words for topic 15: part mars spacecraft system such
5 most freq words for topic 16: edu article writes apr engines
5 most freq words for topic 17: car book cost auto saturn
5 most freq words for topic 18: cars diesels heard matter emissions
5 most freq words for topic 19: insurance geico state companies radar
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From here, We can see that increasing burn in defines some topic more clearly (like don, want, make, people, money). However increasing burn in to 2000 makes that topic go away again. So it can be said that a fair amount of burn-in is necessary to drop the unnecessary Z's but too much burn in will result in dropping a lot of necessary Z's too.

Effect of lag:

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Ran with Niter: 5000 burn-in: 0 lag: 5
5 most freq words for topic 0: edu writes article apr eliot
5 most freq words for topic 1: clutch car shifter sho shift
5 most freq words for topic 2: cars diesels heard matter article
5 most freq words for topic 3: science internet mars information spacecraft
5 most freq words for topic 4: engine power turbo steering feel
5 most freq words for topic 5: etc earth day don planets
5 most freq words for topic 6: bill moon back time support
5 most freq words for topic 7: car ford probe speed even
5 most freq words for topic 8: edu gif uci ics incoming
5 most freq words for topic 9: station launch option shuttle redesign
5 most freq words for topic 10: oil service come lights change
5 most freq words for topic 11: space nasa sci gov world
5 most freq words for topic 12: mission hst shuttle solar pat
5 most freq words for topic 13: system writes oort ray cloud
5 most freq words for topic 14: insurance geico want good two
5 most freq words for topic 15: george writes article mustang edu
5 most freq words for topic 16: cars manual toyotaseat small
5 most freq words for topic 17: henry toronto spencer edu svr
5 most freq words for topic 18: make don cost want book
5 most freq words for topic 19: sky light people rights night
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Ran with Niter: 5000 burn-in: 0 lag: 10
5 most freq words for topic 0: cost book want blue saturn
5 most freq words for topic 1: henry toronto spencer high zoo
5 most freq words for topic 2: cars manual seat toyota small
5 most freq words for topic 3: etc earth day similar large
5 most freq words for topic 4: don make two even want
5 most freq words for topic 5: engine power turbo torque steering
5 most freq words for topic 6: article edu writes apr eliot
5 most freq words for topic 7: space bill moon sci back
5 most freq words for topic 8: cars diesels people writes heard
5 most freq words for topic 9: car ford probe speed find
5 most freq words for topic 10: oil service time lights come
5 most freq words for topic 11: clutch shifter sho don car
5 most freq words for topic 12: sky light night uiuc rights
5 most freq words for topic 13: edu george mustang blah howell
5 most freq words for topic 14: edu gif uci ics incoming
5 most freq words for topic 15: station launch option shuttle redesign
5 most freq words for topic 16: writes system edu oort ray
5 most freq words for topic 17: mission hst solar shuttle pat
5 most freq words for topic 18: insurance good geico edu radar
5 most freq words for topic 19: science nasa internet information part
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Ran with Niter: 5000 burn-in: 0 lag: 20
5 most freq words for topic 0: sky people light rights night
5 most freq words for topic 1: station launch option design shuttle
5 most freq words for topic 2: car clutch shifter sho shifting
5 most freq words for topic 3: large etc earth day planets
5 most freq words for topic 4: cars diesels heard emissions people
5 most freq words for topic 5: want cost book don saturn
5 most freq words for topic 6: space bill moon such sci
5 most freq words for topic 7: edu gif uci ics incoming
5 most freq words for topic 8: article apr writes edu engines
5 most freq words for topic 9: car ford probe speed find
5 most freq words for topic 10: cars small manual toyota find
5 most freq words for topic 11: don make even two use
5 most freq words for topic 12: mission hst shuttle solar pat
5 most freq words for topic 13: george mustang howell big camaro
5 most freq words for topic 14: oil service change come lights
5 most freq words for topic 15: insurance good system oort writes
5 most freq words for topic 16: nasa science internet information part
5 most freq words for topic 17: henry toronto spencer high svr
5 most freq words for topic 18: edu writes article time called
5 most freq words for topic 19: engine power turbo feel torque
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From here, it seems like increasing lag makes the topic more sparsed. This makes sense as more Z are being discarded with increasing lag. So too much lag does not seem to do much good in out topic modeling algorithm.