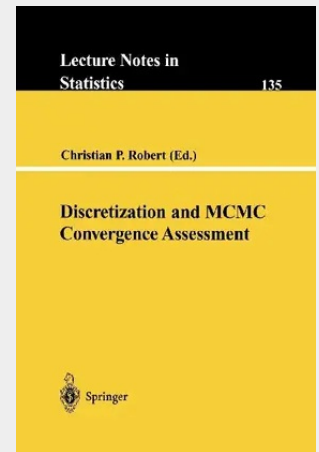


Discretization and MCMC Convergence Assessment

The exponential increase in the use of MCMC methods and the corresponding applications in domains of even higher complexity have caused a growing concern about the available convergence assessment methods and the realization that some of these methods were not reliable enough for all-purpose analyses. Some researchers have mainly focussed on the convergence to stationarity and the estimation of rates of convergence, in relation with the eigenvalues of the transition kernel. This monograph adopts a different perspective by developing (supposedly) practical devices to assess the mixing behaviour of the chain under study and, more particularly, it proposes methods based on finite (state space) Markov chains which are obtained either through a discretization of the original Markov chain or through a duality principle relating a continuous state space Markov chain to another finite Markov chain, as in missing data or latent variable models. The motivation for the choice of finite state spaces is that, although the resulting control is cruder, in the sense that it can often monitor convergence for the discretized version alone, it is also much stricter than alternative methods, since the tools available for finite Markov chains are universal and the resulting transition matrix can be estimated more accurately. Moreover, while some setups impose a fixed finite state space, other allow for possible refinements in the discretization level and for consecutive improvements in the convergence monitoring.

The exponential increase in the use of MCMC methods and the corresponding applications in domains of even higher complexity have caused a growing concern about the available convergence assessment methods and the realization that some of these methods were not reliable enough for all-purpose analyses. Some researchers have mainly focussed on the convergence to stationarity and the estimation of rates of convergence, in relation with the eigenvalues of the transition kernel. This monograph adopts a different perspective by developing (supposedly) practical devices to assess the mixing behaviour of the chain under study and, more particularly, it proposes methods based on finite (state space) Markov chains which are obtained either through a discretization of the original Markov chain or through a duality principle relating a continuous state space Markov chain to another finite Markov chain, as in missing data or latent variable models. The motivation for the choice of finite state spaces is that, although the resulting control is cruder, in the sense that it can often monitor convergence for the discretized version alone, it is also much stricter than alternative methods, since the tools available for finite Markov chains are universal and the resulting transition matrix can be estimated more accurately. Moreover, while some setups impose a fixed finite state space, other allow for possible refinements in the discretization level and for consecutive improvements in the convergence monitoring.



106,99 €
99,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780387985916
Medium: Buch
ISBN: 978-0-387-98591-6
Verlag: Humana
Erscheinungstermin: 13.08.1998
Sprache(n): Englisch
Auflage: 1. Auflage 1998
Serie: Lecture Notes in Statistics
Produktform: Kartoniert
Gewicht: 324 g
Seiten: 192
Format (B x H): 155 x 235 mm

