



Mathematics > Statistics Theory

Bayesian analysis of variable-order, reversible Markov chains

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(Submitted on 13 May 2011)

We define a conjugate prior for the reversible Markov chain of order r . The prior arises from a partially exchangeable reinforced random walk, in the same way that the Beta distribution arises from the exchangeable Polya urn. An extension to variable-order Markov chains is also derived. We show the utility of this prior in testing the order and estimating the parameters of a reversible Markov model.

Comments: Published in at [this http URL](#) the Annals of Statistics ([this http URL](#)) by the Institute of Mathematical Statistics ([this http URL](#))

Subjects: **Statistics Theory (math.ST)**

Journal reference: Annals of Statistics 2011, Vol. 39, No. 2, 838-864

DOI: [10.1214/10-AOS857](#)

Report number: IMS-AOS-AOS857

Cite as: [arXiv:1105.2640](#) [math.ST]

(or [arXiv:1105.2640v1](#) [math.ST] for this version)

Submission history

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[v1] Fri, 13 May 2011 08:07:26 GMT (665kb)

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