Intro
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Direct sampling
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MCMC Algorithms
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MCMC in pratice
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MCMC in practice

Intro
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Direct sampling
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MCMC Algorithms
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MCMC in pratice
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Software

MCMC softwares

- **BUGS** : *Bayesian inference Using Gibbs Sampling*

  1989 MRC BSU University of Cambridge (UK)

  ⇒ flexible software for Bayesian analysis in complex statistical models through MCMC algorithms

  - <u>WinBUGS</u>: ⚠ clic + *Windows only* + stopped development

    `https://www.mrc-bsu.cam.ac.uk/software/bugs/the-bugs-project-winbugs/`

  - <u>OpenBUGS</u>: ⚠ clic + *Windows only* + *Linux partially*

    `https://www.mrc-bsu.cam.ac.uk/software/bugs/openbugs/`

  - <u>JAGS</u>: 😀 command line + ℝ interface

    `http://mcmc-jags.sourceforge.net/`

- **STAN**: specialized for high-dimensional problems

  `http://mc-stan.org/`

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Software

rjags

JAGS software is modern and efficient :

- relies on the BUGS language to specify a Bayesian model

- ⓡ interface thanks to rjags package

- results analysis with ⓡ packages
  - coda
  - HDInterval