Concentration of the posterior

Doob's convergence

→ *Seeing Theory*, Brown University

Normal approximation

Bernstein-von Mises Theorem (or Bayesian central-limit theorem):
For a large n the *posterior* can be approximated by a normal distribution.

$$p(\theta|\boldsymbol{y}) \approx \mathcal{N}(\hat{\theta}, I(\hat{\theta})^{-1})$$

Consequences:

- Bayesian methods and frequentist procedures based on maximum likelihood give, for large enough n, very close results
- the *posterior* can be computed as a normal whose mean and variance we can calculate simply using the MAP