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- Fit once, then use Pareto smoothed importance sampling (PSIS-LOO)

- Asymptotically equivalent to WAIC

- Assumed posterior not highly sensitive to leaving out single observations

Model comparison

Efficient approximate LOO-CV

Vehtari, A., Gelman, A., and Gabry, J. (2017).
Practical Bayesian model evaluation using leave-one-out cross-validation and WAIC.
Statistics and Computing. 27(5), 1413–1432.
doi: [10.1007/s11222-016-9696-4](https://doi.org/10.1007/s11222-016-9696-4)

Vehtari, A., Gelman, A., and Gabry, J. (2017).

Pareto smoothed importance sampling.

working paper

arXiv: arxiv.org/abs/1507.02646/

- Has finite variance property of truncated IS

- And less bias (replace largest weights with order stats of generalized Pareto)

- Advantage: PLS-LOO CV more robust + has diagnostics (check assumptions)

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Diagnostics

Pareto shape parameter & influential observations

