Discussion of: "A Multidimensional Objective Prior Based On Scoring Rules" by Isadora Antoniano-Villalobos

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Thursday 28th April, 2022

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Talk Overview

- Goal: Create a non subjective prior which does not depend on the likelihood and which is proper;
- Proposed solution: A family of priors designed by following scoring rules;
- Distuinguished solution: Lomax distribution:

$$q(\theta) = \frac{a}{(a+\theta)^2}.$$

Question overview

- Nonparametrics?
- Interpretations?
- manifolds?
- Partial information?
- Summary statistics?
- Simulation?

Applications

What does the information criterion imply in:

- (in)finite mixture models?
- Sequence priors: Wavelets, Splines, Fourier, Taylor?

Interpretation of the information criterion

- Can we give an interpretation to the information criterion in nonparametric models?
- What can it tell us about frequentist properties?

Exploring new shapes

- Can we apply the information criterion on general manifolds? How does the prior look?
- Does there exists a sparse variant?

Partial information

- If we have prior information on some but not all parameters, how to incorporate this?

Summary statistics?

- Prior mean does not exist, so maybe no posterior mean. Alternatives?

Simulation

- Is there a way to efficiently simulate draws from the prior/posterior?

Thank you!