

## How many components in a finite mixture?

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This talk discusses a set of astronomical data on recession velocities of galaxies, presented by Roeder in JASA 1990. The data show three well-separated clusters, and the question of interest is how many components are present in a Gaussian mixture.

Published Bayesian analyses vary widely in their answers to this question. We give another Bayesian analysis based on the posterior distributions of the likelihoods (Aitkin 2001, 2010, 2011) for each number of components. This comes to a reasonable conclusion, which does not depend on the priors for the models' parameters.

### References

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Roeder, K. (1990) Density estimation with confidence sets exemplified by superclusters and voids in the galaxies. *JASA* 85, 617-624.