

GEOLOGY QUESTIONS

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1 INTRODUCTION

2 EARTH STRUCTURE

- Crust-mantle vs lithosphere-asthenosphere?
- Upper mantle within lithosphere?
- (ANDERSON (2007) *New Theory of the Earth*, chapter 17, Recycling of crustal materials and mantle heterogeneity) 5 reservoir mixing model for isotope variation in MORB, OIB, and CRB. What's the dimension of the data? Is this trivial, or is there some real dimension reduction? Does it actually fit in a 4d simplex?

3 PLATE TECTONICS

- Are plates real?
- Are ocean and continent plates the same thing?
- Just crust or all of lithosphere?
- Where are subducting plates/slabs relative to lithosphere/asthenosphere?
- Why do plates move?
- Is plate motion rigid?
- Plate motion relative to what?
- Asphericity effects? Could this be a driver?

4 MINERALS

- Is there some rational organizing principle?
- Is there a way of plotting mineral attributes that clarifies groups?
- Better naming convention, separating rocks and minerals, displaying compositions?

5 ROCKS

A REFERENCES

- [1] Don L. ANDERSON.
New Theory of the Earth.
Cambridge University Press, 2007.
URL: <https://authors.library.caltech.edu/records/v1ca8-zj672>
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