

ESS 502: Homework #2; Magnetism and Vine and Mathews (1963) Abstract; Due Wednesday, Jan 17, 2018.

Write an abstract for Vine and Matthews:

Forget all experimental detail, omit references and lengthy expositions of your detailed knowledge. Limit yourself to a short description of (i) the problem and (ii) the solution. "An abstract should be defined as a summary of the information in a document." "The abstract should (i) state the principal objectives and scope of the investigation, (ii) describe the methodology employed, (iii) summarize the results, and (iv) state the principal conclusions." Keep your abstract to one paragraph and less than 250 words. Shortest abstract of a very complex paper is $E=mc^2$. A paper is often judged by its abstract. Examine every word with care, remove unnecessary words, if it can be said in 100 words rather than 250, do so.

Also due Wednesday:

1. Describe the geometry of Earth's magnetic field. (how are magnetic lines of force oriented around the earth?) (including dipole and non-dipole)
2. Describe variations in time and space of Earth's magnetic field. (secular, reversals, polar wander, field strength)
3. Under what conditions does the "geocentric axial dipole hypothesis" hold?
4. Describe the essential features of the theory for the origin of the earth's magnetic field that provide explanation for answers to 1 and 2.
5. Describe the process by which a sedimentary rock deposited in a quiet lake environment becomes magnetized.
6. What rock properties of remnant magnetism are measured in paleomagnetic studies? What do these quantities tell us about the past history of the rock?
7. Concerning the continental paleomagnetic record:
 - a. What is observed?
 - b. How is it interpreted?
8. Questions 2 and 3, from Chapter 3 of Fowler