

Scientific Paper Review

A supplementary group study session for Fundamentals of Earth Science 2

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Scientific Paper Review is an additional weekly class for students who are interested in learning more about the scientific approach on how to study a specific topic presented on each lecture. In addition to participating in the lectures the students would need to read a recent peer reviewed scientific paper about each weeks topic. The students could either participate on an additional lecture where the contents and the methods of the paper will be explained or read the paper by themselves. The style of the lecture would be conversational, inviting the students to think critically about the strengths and weaknesses of the presented research. The idea would be to get the international and Japanese students to discuss global environmental issues from different points of views.

There would be a simple question about each paper in the quizzes and exams held in the class. At the end of the course the students would be asked to choose one of papers discussed during the scientific paper review class and write a one page review of the paper explaining the study and discussing the implications of the results.

The meeting time and place for the study session will be decided on the 1st class of the Fundamentals of Earth Science 2 course.

| The Topic of the Lecture | Topical Research Paper | Authors | Year |
|------------------------------------|---|----------------------|-------------|
| Plate Tectonics and the rock cycle | Imaging the subducting slabs and mantle upwelling under the Japan Islands | Zhao et al. | 2012 |
| Volcanoes | The Yellowstone magmatic system from the mantle plume to the upper crust | Huang et al. | 2015 |
| Seismology 1: Earthquakes | Injection-Induced Earthquakes | Ellsworth | 2013 |
| Seismology 2: Earth's interior | Connecting slow earthquakes to huge earthquakes | Obara and Kato | 2016 |
| The carbon cycle | Serpentinite Carbonation for CO ₂ Sequestration | Power et al. | 2013 |
| The water cycle | Global Hydrological Cycles and World Water Resources | Oki and Kanae | 2006 |
| The climate system | The role of the thermohaline circulation in abrupt climate change | Clark et al. | 2002 |
| Climate change 1 | Paleoproterozoic snowball Earth: Extreme climatic and geochemical global change and its biological consequences | Kirschvink et al. | 2000 |
| Climate change 2 | Anthropogenic influences on major tropical cyclone events | Patricola and Wegner | 2018 |
| Geologic resources | News from the seabed – Geological characteristics and resource potential of deep-sea mineral resources | Peterson et al. | 2016 |