

News (In Japanese)

Seminar by Prof. Kanamori and Prof. Karato (Oct. 18 (Wed), 13:00 ~ 15:00)

[[Topics \(In Japanese\)](#)] Friday October 13th, 2017

Dear G-Safety students and related professors

We will hold an international seminar given by Prof. Kanamori and Prof. Karato as follows.

The course will be basically given in English.

Date : **October 18 (Wed), 2017, 13:00 ~ 15:00**

Venue : Room N204, 2nd Floor, Science Complex C, Graduate School of Science ([H-04 in the map](#))

Lecturer 1 : **Prof. Hiroo Kanamori** (California Institute of Technology)

Title : **Kinematics to Energetics -Application of modern seismological practice-**

Lecturer 2 : **Prof. Shun-ichiro Karato** (Yale University)

Title : **Composition and origin of the Moon**

Please see the [poster](#) for the details.

We look forward to your participation !

“Kinematics to Energetics -Application of modern seismological practice-”

Prof. Hiroo Kanamori (California Institute of Technology)

金森 博雄 教授 (カリフォルニア工科大学)

October 18 (Wed), 2017, 13:00~14:00

@Room N204, Science Complex C, Graduate School of Science

2017年10月18日(水) 13:00~14:00

@理学研究科 合同C棟 2階 多目的室 (N204)

Seismology has made significant advances in kinematic description of earthquakes. For understanding the physics of earthquake process, quantitative interpretation of kinematic parameters in terms of energy partitioning during an earthquake (i.e., energetics) is necessary. Yet, the progress in this field has been slow because of the difficulty in estimating some key parameters such as stress drop, radiated energy and dissipated energy. Recent progress in high-resolution earthquake location methods, energy estimation methods, and estimation of fracture energy can significantly contribute to earthquake energetics. This presentation summarizes the results from recent studies in this field on deep earthquakes, subduction-zone earthquakes, and crustal earthquakes including an earthquake on the San Jacinto fault, and the 2016 Tottori earthquake.

“Composition and origin of the Moon”

「月の化学組成と起源」

Prof. Shun-ichiro Karato (Yale University)

唐戸 俊一郎 教授 (イエール大学)

October 18 (Wed), 2017, 14:00~15:00

@Room N204, Science Complex C,
Graduate School of Science

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Recent geochemical studies using advanced analytical technologies have provided challenges to the models of formation of the Moon. The Moon has only slightly less amount of water (hydrogen) and its isotopic composition is remarkably similar to that of Earth. These observations are hard to be explained using a commonly believed theory of the origin of the Moon, a giant impact model, because this model would imply a loss of much of volatiles, and in its canonical form, it predicts that a majority of materials of the Moon is from the impactor. I present models to explain these two observations based on mineral physics-based models of formation of the Moon where the role of liquids is emphasized.

月の化学組成については、最近、高精度の計測機器を用いて新しい結果が得られた。その結果、月に地球と同程度の水が存在すること、月物質の同位体組成が地球のものに酷似していることがわかった。これは一般にうけいれられているジャイアントインパクト（巨大衝突）モデルにとって難問を提示したことになる。というのは、ジャイアントインパクトでは、衝突後に超高温になり、できた月にはほとんどの揮発性物質がなくなっていると予想されること、また、一般に行われている計算では、ジャイアントインパクトの結果としてできる月の大部分は（形成途上の）地球ではなくインパクターからできているからである。この二つの問題を解決するモデルを提案する。鍵になるのは、従来の月形成や惑星形成論で無視されてきた、液体の役割である。