

## Let's start the discussion of the international tuning of research assessment in earth science to create a culture and indicators of “creation of knowledge”

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We propose to the members of international Earth science communities a challenging attempt to create a culture in which the research community self-evaluates its research activities and fulfill its accountability to the public.

The Science Council of Japan amended the “Code of Conduct for Scientists-Revised Edition-” (2013), to include in “Research activities” that “Scientists should publish their research results in papers, etc.” and in “Dialogue with the public” that “Scientists will strive to provide scientific advice” . A proposal on open science recognizes that “data users can make research achievements with papers and patents, but data producers and data distributors cannot make research achievements with individual names” (Science Council of Japan, 2016). That is, the responsibilities of researchers (scientists) to entrustments by the society are becoming clearer.

However, the research community still implicitly believes that “research achievements = papers” . We think that this has led to the misuses of indicators such as citation counts and impact factors (IFs), to “*the worship of papers*” in organizations and researchers' performance evaluations, and the over-emphasis on research fields, such as science and technology, which excel at directly solving problems. These are distortions caused by easily adopting quantifiable items as evaluation indices without the ideals of science and researchers contributing to “creation of knowledge,” and it is strongly desired to review them from the ground up. Also, as the medieval university has died due to the spread of typographic printing (Yoshimi, 2011), the explosive development of the information infrastructure using the Internet with artificial intelligence has fundamentally shaken not only the presence of the university but also the value for “creation of knowledge” . Meanwhile, the society strongly expects the academia to contribute to the realization of a sustainable society, and the “Scientific and Technological Community” was designated as one of the nine “Major Groups” in the formulation of “2030 Agenda” well known as SDGs (United Nations, 2015).

We propose to get started with the following steps:

(A) as a grasp of research activities (Institutional Research, IR), we will clarify researchers’ perception of “creation of knowledge” and their actual state of research activities. We respect that the researchers have their own philosophies and values for “creation of knowledge,” which may likely derived from their disciplinary roots. To clarify these, we aim to conduct interviews and questionnaires for JpGU ID holders (members and meeting participants).

(B) We would like to survey the recognition of “creation of knowledge” of the overseas researcher communities and stakeholders and the actual state of their research activities. To this end, we ask AGU, EGU, national science policy officials, funding agencies for information on advanced initiatives and the

code of conduct of researchers etc. in each country. We intend to make an international comparison of the value measures related to “creation of knowledge” .

(C) As we will hold this session at JpGU on the visualization of “creation of knowledge” and proposal of its indicators according to the progress of (A, B) surveys and syntheses, and will also start dialogues with the public as well as discussions in the researcher community. To this end, the emphasis is on the process of discussion and dialogue based on the concept of “tuning” , and mutual understanding and respect of individual "research style" is to be achieved in a multicultural symbiosis of the research community (securing academic diversity).

Keywords: Institutional Research, the worship of papers, creation of knowledge, tuning, impact factors, ideals of science and researchers