Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

MZZ41-12 Room:102A Time:May 19 15:30-15:45

The model of scientific activity: why science is so robust?

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The aim of this presentation is to verify and examine the model about scientific activity in terms of the concept of robustness of science.

What is the purpose of science, the production of true theories or not? This problem has been examined in various contexts of the philosophy of science. Among these, scientific realists insist that we couldn't explain the success of science if science is not true. But critics of this view says that there are many scientific theories or postulates which once supposed successful but abandoned later in the history of science. That is, what is "correct" or "true" is always varied in science, the temporal acceptance of scientific theories is not justify the truth of it.

This is a epistemological problem in science: justification of scientific knowledge. Why we think or believe in or accept the productions of scientific activity? What is the reason? As an answer to this problem, it is important to focus on the practical turn in the philosophy of science: from truth to robustness of science (Wimsatt 1981and 2012; Soler 2012; Boon 2012, etc). That is, the total robustness including the development of observational technique, the modeling of data, the stability of phenomenon, etc generates the reliability of science.

On the other hand, the dual-Feedback-Loop-Operator model (dFLO) as a method of science, which Mineo Kumazawa, *et.al*. proposed, reflects the actual scientific practice and improve the folk understanding of the relation of scientific theory and natural world. This model has a two system, the observational system and the modeling (theorizing) system. These systems always have an influence on each other and produce the most promising understanding of the natural world at that time. So, scientific activity is a process of successive improvement of the two (or more?) systems. Importantly, this model indicate the dynamics of scientific activities and our understanding of nature is not static.

We indicate that the basic concept underlying dFLO is the robustness of science, and examine philosophical importance of this model.

Keywords: philosophy of science, scientific knowledge, STS, collective intelligence