

# A bottleneck against industrial distribution of atmosphere-ocean product from the Earth Simulator

\*Shinya Kakuta<sup>1</sup>, Hajime Nishimura<sup>1</sup>

1. JAMSTEC Japan Agency for Marine-Earth Science and Technology

For public organizations to expand research and development activities into socio-economic ripple effect, this presentation discusses strategy to generate business utilizing the Earth Simulator and its outputs under cooperation with private sectors. To solve social problems, it is necessary not only to create successful cases but also to roll them out and continue operating them for a long term. More and more public funding requires prospects for social application by private sectors to supplement itself. On the other hand, public research organizations, also required to improve socio-economic outcomes from research results, are too short of human resources to meet the requirement, occupied with on-going national projects.

The fundamental bottleneck against social application is the shortage of experts with skills to utilize environmental data, in particular, super-large volumes of meteorological data. We propose a platform to be built so that the bottleneck can be widened by division of data processing to lighten burdens on such a limited number of experts as university researchers, assigning the statistical analysis and assessment after dynamical down-scaling to data scientists or weather forecasters estimated to number around 10,000 in total in Japan, respectively. Down-scaling experts are shorter than data scientists or weather forecasters. Most of data scientists can be assumed to use such scripts as Python. On the other hand, approximately 150 weather forecasters are additionally licensed every year. In addition, private sectors should cooperate with many local governments to specify to utilize the super-large volumes, to set up small servers of in-situ data taken by local governments, and to transform the data into geographical information system.

In a long run, human resources should be developed. Every year, private sectors can headhunt or develop approximately 10 experts for assessment on extreme phenomena in collaboration with national research institutes, advanced local institutes, or universities.

Keywords: industrial distribution, bottleneck, atmosphere and ocean simulation

# 気象プロダクトを社会データと相関解析するまでの工程

Process to correlation analyses between meteorological products & social data

