



System for Efficient content-based retrieval to Analyze Large volume climate data (SEAL) by SI-CAT

-Rapid data extraction from large-ensemble climate simulation database d4PDF-

The d4PDF (database for Policy Decision making for Future climate change) was created for the purpose of combating global warming. It can be downloaded for use from DIAS (Data Integration and Analysis System). However, its total data size—a massive 3PB—often requires extensive downloading time and special technical knowledge in tailoring data, which may prevent users from utilizing this for disaster prevention or for making adaptation measures. To resolve these issues, SI-CAT developed SEAL (System for Efficient content-based retrieval to Analyze Large volume climate data), which allows users to quickly and efficiently retrieve and download results from d4PDF and its related data sets.

SEAL has two main user interfaces: SEAL-F, the search function, and SEAL-V, the visualization and analysis function. Figure 1 shows the SEAL-F user interface, which allows users to filter and refine search results by contents (such as physical values) of the data

files. Also, the selection fields show the most commonly used meteorological data retrieval conditions, so users can simply select the field type and input the unique conditions to retrieve the desired data. Figure 2 is an image of the SEAL-V user interface, which allows users to conduct simple data analysis tasks including generating histograms and time-series plots.

Using SEAL, users could easily extract data with complex conditions such as “Download all precipitation data and average temperature for days that exceed 100mm/day precipitation in Hokkaido prefecture.” Details of this new system, including the operating instructions and examples, are available in the SI-CAT SEAL user’s manual (PDF) that is downloadable from the SI-CAT website*1. We hope that this system will be a useful resource for all.

*1 SI-CAT SEAL
<http://si-cat.diasjp.net/seal/>

Figure 1: Image of SEAL-F search

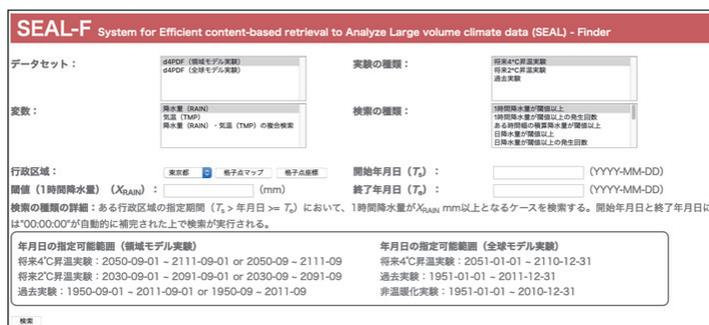


Figure 2: Image of SEAL-V visualization and data analysis

