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An online service for analysing ozone trends within EOSC-synergy

Tobias Kerzenmacher¹, Valentin Kozlov², Borja Sanchis², Ugur Cayoglu², Marcus Hardt², and Peter Braesicke¹

¹IMK-ASF, Karlsruhe Institut of Technology, Eggenstein-Leopoldshafen, Germany

²SCC, Karlsruhe Institut of Technology, Eggenstein-Leopoldshafen, Germany

The European Open Science Cloud-Synergy (EOSC-Synergy) project delivers services that serve to expand the use of EOSC. One of these services, O3as, is being developed for scientists using chemistry-climate models to determine time series and eventually ozone trends for potential use in the quadrennial Global Assessment of Ozone Depletion, which will be published in 2022. A unified approach from a service like ours, which analyses results from a large number of different climate models, helps to harmonise the calculation of ozone trends efficiently and consistently. With O3as, publication-quality figures can be reproduced quickly and in a coherent way. This is done via a web application where users configure their queries to perform simple analyses. These queries are passed to the O3as service via an O3as REST API call. There, the O3as service processes the query and accesses the reduced dataset. To create a reduced dataset, regular tasks are executed on a high performance computer (HPC) to copy the primary data and perform data preparation (e.g. data reduction, standardisation and parameter unification). O3as uses EGI check-in (OIDC) to identify users and grant access to certain functionalities of the service, udocker (a tool to run Docker containers in multi-user space without root privileges) to perform data reduction in the HPC environment, and the Universitat Politècnica de València (UPV) Infrastructure Manager to provision service resources (Kubernetes).