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Reducing the Pain of Data Discovery in Earth System Science

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Ontologies offer significant potential for advancing Earth System Science (ESS) by improving the discoverability and usability of complex datasets and tools. This poster builds on last year's comic, which illustrated the foundational benefits of ontologies, and presents the first steps in implementing generic tools from already existing terminology services designed to enhance data findability and data comprehension. These tools enable scientists to easily search for appropriate data and retrieve information about data from specific repositories, thus supporting the FAIR (Findable, Accessible, Interoperable, and Reusable) principles in ESS.

Key aspects of terminologies include the clear and consistent description of scientific terms, their relationships, and the unambiguous identification of terms to prevent inconsistencies. By using terminologies we can ensure that terms are defined in a way that is both standardized and interoperable across different datasets and research communities. Concrete examples will be drawn from the World Data Center for Climate (WDCC), where first steps have been taken to implement generic tools and extend the application of terminologies, and to thus enhance data discoverability and facilitate better searchability of climate-related information.