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A Quality Label Presentation of Product Quality for Aerosol Satellite Data Products

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There is interest within the broad research community to leverage satellite data for cross-disciplinary analysis and to make use of the data in ways unanticipated by the data provider. However, data product quality is represented in a variety of ways and venues, presenting a challenge to comparing, merging, or fusing multiple data products. Researchers seek clearly and consistently characterized product quality to facilitate assessment of product fitness-for-use. We argue that data product description mechanisms should be augmented with facilities to present product quality information; targeted to provide a condensed and clear view of product quality and to support comparison with quality of other like products.

We propose a method of provisioning product quality into aspects (e.g. completeness, consistency, accuracy, bias) and using quantifications of recognized quality indicators as evidence to help characterize these aspects of the product quality. We describe the product quality ontology developed from his approach and how it can be used to facilitate characterizations and comparisons of product quality. Finally, we illustrate the utility of this approach by showing how we have applied it to a quality label presentation of product quality for NASA Aerosol data products within a prototype implementation of the NASA Giovanni Data Access and Analysis Tool.