The Complete Data Fusion as a tool for reducing the spatial and temporal resolution of Sentinel 4 and Sentinel 5 products minimizing the loss of information.

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It is known that the atmospheric Sentinels will provide an enormous amount of data with unprecedented spatial and temporal resolution. In this scenario, a central problem to face is to enable a generic data processor to ingest such a large amount of data without loss of information.

An algorithm such as the Complete Data Fusion (CDF) is particularly interesting as it is able to reduce the resolution of the input products minimizing the loss of information. The CDF is an algorithm that accepts as inputs a generic number of products that can be considered co-located. Each of these products is represented by a profile characterized by its variance covariance matrix, its averaging kernel matrix and the a priori information used in the retrieval. The output of the fusion is a single product that has the same structure of the input ones and that collects all the information of the input products.

This work describes the characteristics of the products obtained by fusing simulated ozone profiles in accordance with the specifications of the atmospheric Sentinel missions, comparing them with those of the original products and highlighting the aspects that make the fusion a particularly effective preprocessing step.