C3IEL : a train of nano-satellites to study the clouds and their environment

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Résumé

The French-Israeli C3IEL (Cluster for Climate and Cloud Imaging of Evolution and Lightning) is currently under study. This demonstration mission aims at characterizing the clouds and their environment. The different nano-satellites of the C3IEL mission will carry a suite of sensors like visible and near-infrared imagers, optical lightning sensors and photometers, and a micro-spectrometer. The observations of these space-borne sensors will simultaneously document the vertical development of cloud top, the lightning activity and the distribution of several atmospheric chemical species, all within the same geographical domain. First the scientific objectives of the C3IEL mission will be introduced. Then we will discuss on the nano-satellite train configuration, the observational strategy and the different sensors. Finally we will introduce the observations of the C3IEL mission and a first set of potential products including some synergistically developments with observations from other space-based missions.

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