

EGU22-6920

<https://doi.org/10.5194/egusphere-egu22-6920>

EGU General Assembly 2022

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



## Exploiting multi-point in situ measurements during the Comet Interceptor comet flyby

Johan De Keyser<sup>1</sup>, Pierre Henri<sup>2</sup>, and Cyril Simon-Wedlund<sup>3</sup>

<sup>1</sup>Royal Belgian Institute for Space Aeronomy, Space Physics, Brussels, Belgium (johan.dekeyser@aeronomie.be)

<sup>2</sup>LPC2E, CNRS, Orléans, France

<sup>3</sup>Space Research Institute, Austrian Academy of Sciences, Graz, Austria

The ability to conduct multi-point measurements is a hallmark of the ESA-JAXA/Comet Interceptor mission currently in development. The mission consists of one spacecraft (A) and two probes (B1 and B2) which are expected to fly by a medium- to high-activity comet at a high relative speed (up to 70 km/s). The payload on spacecraft A and on probes B1/B2 provides different opportunities to perform multi-point in-situ data exploitation. We discuss how information about radial, solar zenith angle and latitudinal variations can be extracted from the measurements, for instance using multi-point data analysis techniques inherited from the ESA/Cluster mission. We consider different spacecraft configurations and different geometries for the spacecraft trajectory relative to the comet, as well as target comets with gas production rates between those of 67P/Churyumov-Gerasimenko and 1P/Halley. We highlight the various opportunities and limitations of the proposed algorithms. Particular attention is given to the need for data that are well intercalibrated and discuss what can be done if the intercalibration is not perfect.