

# Overview of the main achievements of the Ozone Climate Change Initiative Project

M. Van Roozendael<sup>1</sup>, J.-C. Lambert<sup>1</sup>, C. Lerot<sup>1</sup>, D. Hubert<sup>1</sup>, A. Keppens<sup>1</sup>, D. Balis<sup>2</sup>, M. Koukouli<sup>2</sup>, P. Braesicke<sup>3</sup>, A. Laeng<sup>3</sup>, G. Stiller<sup>3</sup>, P.-F. Coheur<sup>4</sup>, C. Clerbaux<sup>5</sup>, J.-P. Pommereau<sup>5</sup>, M. Dameris<sup>6</sup>, D. Loyola<sup>6</sup>, M. Coldewey-Egbers<sup>6</sup>, K.-P. Heue<sup>6</sup>, M. Weber<sup>7</sup>, N. Rahpoe<sup>7</sup>, R. Siddans<sup>8</sup>, G. Miles<sup>8</sup>, V. Sofieva<sup>9</sup>, J. Tamminen<sup>9</sup>, R. van der A<sup>10</sup>, J. van Peet<sup>10</sup>, M. van Weele<sup>10</sup>, R. Stubi<sup>11</sup>, D. Degenstein<sup>12</sup>, K. Walker<sup>13</sup>, M. Lopez-Puerta<sup>14</sup>, and C. Zehner<sup>11</sup>

<sup>1</sup>Belgian Institute for Space Aeronomy (BIRA-IASB), Brussels, Belgium

<sup>2</sup>Aristotle University of Thessaloniki (AUTH), Thessaloniki, Greece

<sup>3</sup>Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

<sup>4</sup>Université Libre de Bruxelles (ULB), Belgium

<sup>5</sup>LATMOS, Paris, France

<sup>6</sup>German Aerospace Center (DLR), Oberpfaffenhofen, Germany

<sup>7</sup>Institute of Environmental Physics (IUP), University of Bremen, Bremen, Germany

<sup>8</sup>Rutherford Appleton Laboratory (RAL), Chilton, Didcot, UK

<sup>9</sup>Finnish Meteorological Institute (FMI), Helsinki, Finland

<sup>10</sup>Royal Netherlands Meteorological Institute (KNMI), De Bilt, Netherlands

<sup>11</sup>MeteoSwiss, Payerne, Switzerland

<sup>12</sup>University of Saskatchewan, Canada

<sup>13</sup>University of Toronto, Canada

<sup>14</sup>Institute of Astrophysics of Andalusia, Granada, Spain

<sup>15</sup>European Space Agency (ESA/ESRIN), Frascati, Italy

Atmospheric ozone is an Essential Climate Variable which impacts the radiation budget of the Earth, interacts with atmospheric dynamics and climate, and influences chemically other radiatively active species. As part of the Ozone Climate Change Initiative (Ozone\_cci) project, a large number of ozone data sets have been generated from a full suite of atmospheric chemistry satellite missions. Following a first phase of 3 years during which new and improved algorithms and data products have been demonstrated and assessed against well-defined user requirements, the ongoing second phase of the Ozone\_cci concentrates on extending and further improving these data sets with the ambition to realize the full potential of the existing archive of satellite ozone sensors. We present an overview of the main realizations of the project. This covers long-series of consistent ozone columns and profiles derived from nadir UV sensors and the thermal infrared IASI instrument. Also addressed is the generation of a large scale coherent data base of vertically resolved ozone measurements derived from a full suite of limb and occultation sensors, optimised for accuracy in a broad range of altitudes extending from the UT/LS to the mesosphere.