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► To cite this version:

Bernd Funke, Martyn Chipperfield, Quentin Errera, Felix Friedl-Vallon, Sophie Godin-Beekmann, et al.. The Changing-Atmosphere Infra-Red Tomography Explorer (CAIRT) Earth Explorer 11 candidate mission. EGU General Assembly 2024, Apr 2024, Vienna, Austria. pp. EGU24-20214, 10.5194/egusphere-egu24-20214 . insu-04504721

HAL Id: insu-04504721

<https://insu.hal.science/insu-04504721>

Submitted on 30 May 2024

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EGU24-20214, updated on 30 May 2024
<https://doi.org/10.5194/egusphere-egu24-20214>
EGU General Assembly 2024
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The Changing-Atmosphere Infra-Red Tomography Explorer (CAIRT) Earth Explorer 11 candidate mission

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The Changing-Atmosphere Infra-Red Tomography Explorer (CAIRT) is currently in Phase A as one of two final candidates for ESA's Earth Explorer 11. As a Fourier transform infrared limb imager, CAIRT will observe simultaneously from the middle troposphere to the lower thermosphere at high spectral resolution and with unprecedented horizontal and vertical resolution. With this, CAIRT will provide critical information on (a) atmospheric gravity waves, circulation and mixing, (b) coupling with the upper atmosphere, solar variability and space weather and, (c) aerosols and pollutants in the upper troposphere and lower stratosphere. In this presentation we will give an overview of CAIRT's science goals and the expected mission performance, based on latest results from feasibility studies performed during Phase 0.