# Bachelor Thesis / Master Thesis

## Validation and Application of Satellite Measurements of Atmospheric $CO_2$

The Orbiting Carbon Observatory-2 (OCO-2) [1] is a novel satellite comprised of high resolution grating spectrometers that acquire precise measurements of atmospheric $CO_2$ from space (launched July 2014). The high temporal/spatial resolved satellite-based measurements help determine the emissions of $CO_2$ from major urban centers across the globe, e.g. Munich or Boston [2].

The tasks of the thesis are to determine:

1) How does the $CO_2$ column concentration measured from space with the OCO-2 satellite compare with the recent measurements from ground?
2) What is the $CO_2$ concentration enhancement between the urban site and rural site in Munich, according to OCO-2 measurements?
3) Based on the satellite measurements, where are the best locations to measure atmospheric $CO_2$ from ground in Munich?
4) What is the $CO_2$ emission rate [kg/s] from Munich?

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[1]: http://oco.jpl.nasa.gov
[2]: NASA project: Validation and Application of OCO-2 Data in the Northeastern United States.
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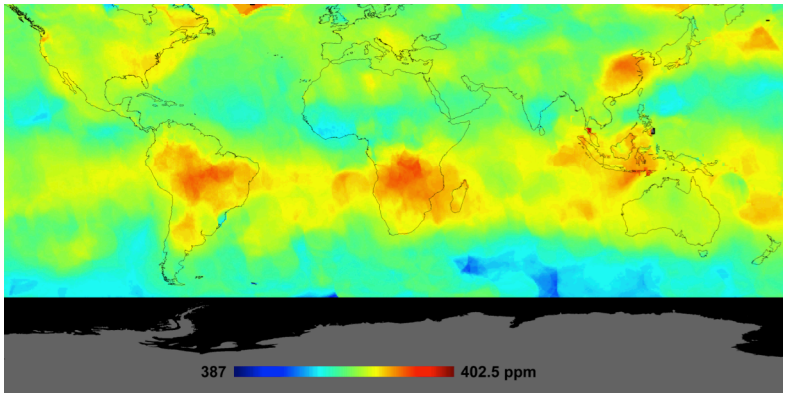


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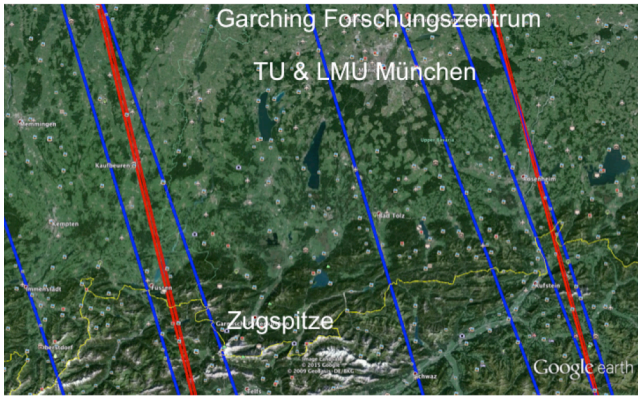


--- Satellite nadir track
--- Satellite glint track