

Monthly Technical Report

(Due to AQRP Project Manager on the 8th day of the month following the last day of the reporting period.)

PROJECT TITLE	Analysis of VOC, NO ₂ , SO ₂ and HCHO data from SOF, mobile DOAS and MW-DOAS during DISCOVER-AQ,	PROJECT #	14-007
PROJECT PARTICIPANTS (Enter all institutions with Task Orders for this Project)	Chalmers University of Technology University of Houston	DATE SUBMITTED	1/7/15
REPORTING PERIOD	From: December 1, 2014 To: December 31, 2014	REPORT #	5

A Financial Status Report (FSR) and Invoice will be submitted separately from each of the Project Participants reflecting charges for this Reporting Period. I understand that the FSR and Invoice are due to the AQRP by the 15th of the month following the reporting period shown above.

Detailed Accomplishments by Task *(Include all Task actions conducted during the reporting month.)*

Task 1b) Course-on-ground heading of the measurement vehicle has been calculated for a test case day (September 25) based on GPS data. This information, together with solar zenith and azimuth angles calculated based on time of day and location, has been used to determine the relevant radiative transfer geometry for each measured spectrum. From this data a number of geometry-dependent parameters calculated from the radiative transfer simulations (see Task 1c below) could be determined for each measured spectrum. Some of these (O₃, O₄ and Ring columns) are simply for the purpose of verifying the radiative transfer simulations, while the others (air mass factors for the species of interest) are for interpreting the evaluated columns. Initial comparisons between the spectral evaluation results and the radiative transfer derived parameters have been made and the result was at least partially promising although some question marks remain. These question marks have prompted investigation of some modifications to the spectral retrieval and radiative transfer simulations. These will be carried out in the following month.

Task 1c) The radiative transfer model has been run in a number of different modes for the test case of September 25. From these simulations geometry-dependent air mass factors and O₄ and Ring spectrum columns have been calculated for use in Task 1b (see above).

Preliminary Analysis *(Include graphs and tables as necessary.)*

NA

Data Collected *(Include raw and refine data.)*

NA

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

None

Goals and Anticipated Issues for the Succeeding Reporting Period

We will continue with task 1 b and 1 c. The data will be finalized and we will continue the comparisons to the Discover data.

Detailed Analysis of the Progress of the Task Order to Date *(Discuss the Task Order schedule, progress being made toward goals of the Work Plan, explanation for any delays in completing tasks and/or project goals. Provide justification for any milestones completed more than one (1) month later than projected.)*

Submitted to AQRP by: _____

Principal Investigator: Johan Mellqvist_____

(Printed or Typed)