

# CURRICULUM VITAE

REMUS HANEA

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## ADDRESS

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## PERSONAL DETAILS

Gender: Male  
Date of birth: 10th of September, 1975  
Place of birth: Focsani, Romania  
Present Citizenship: Romanian

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## EDUCATION

- Since 10/2001      Ph.D. student at Delft University of Technology, The Netherlands.  
Project title: *Data assimilation with Kalman Filter for large scale atmospheric chemistry transport models*; Supervisors: Prof. Dr. A.W.Heemink, Dr. Guus Velders  
I intend to complete the Ph.D. in Sept, 2005.
- 10/1997–06/1999    MSc. in Applied Mathematics at Faculty of Mathematics, University of Bucharest, Romania  
Specialization: Applied Statistics, Game Theory, Stochastic Processes and Operational Research  
Thesis: *Mathematical Models for Life Insurance*; Supervisor: Conf. Dr. V. Craiu
- 10/1993–06/1997    Undergraduate Studies at Faculty of Mathematics, University of Bucharest, Romania  
Specialization: Theoretical Mathematics.

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## THESIS

In 2000 RIVM, TNO, TUD and KNMI worked on the BCRS project Stropdas (satellite Remote Sensing of Ozone Predictions with Data assimilation) employing the Kalman filter in combination with the atmospheric chemistry-model Euros and observations of atmospheric pollutants. In this project this method and the model will be developed and employed to derive atmospheric concentrations and emissions for Europe and the Netherlands.

Questions to be answered: What air quality related information can be obtained by combining observational data with the models of the atmosphere? What are the uncertainties related with the concentrations and emissions of  $NO_x$ ,  $VOC$ ,  $CH_4$ ?

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## WORKING EXPERIENCE

- Since 10/2001      Ph.D. student at Delft Institute of Applied Mathematics, Technical University of Delft, Netherlands
- 09/1997–10/2001    Assistant Professor, Department of Mathematics, Technical University of Civil Engineering Bucharest, Romania I have taught Calculus, Linear Algebra and Programming (First year students) and Operational Research (Third year students)

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## ACTIVITIES

- 3-15 Oct 2005      I have participated as student in the Cargese international summer school on Upper troposphere and lower stratosphere. The main topics were: Observations, Modelling and understanding and Data assimilation. (<http://www.cost723.org/school/scope.html>)
- 14-23 July 2005    I was invited to give a course on Kalman Filter application for air pollution modelling at the Institute of Technology Surabaya, Indonesia, in the framework of a summer school.
- 6-12 Sept 2004     I was invited by Prof. Greg McRae at the Department of Chemical Engineering, Massachusetts Institute of Technology for a week (visiting researcher) to define some future projects and to discuss the possibility of Prof. McRae to be in my Ph.D. committee.
- 7-18 July 2003     I participated as student in the Summer School on Data Assimilation for Atmospheric and Climate System Prediction, Boulder, Colorado organized by Advanced Study Program and the Data Assimilation Initiative.
- 22 July-2 Aug 2002 I participated as student in the Summer School on Inverse Methods and Data Assimilation, Oregon State University organized by Prof. Andrew Bennett. The topics

presented were: adjoint models, 4D-var methods and Representer method.

24-28 March 2002 I participated as student in the LMS/EPSRC Short Course "New Trends in Computational Differential Equations", held by University of Cambridge, Selwyn College.

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## PUBLICATIONS

### Conference papers

- "Kalman filter for data assimilation of boundary layer ozone in Europe with a regional chemistry-transport model" in the Proceedings of the EGS-AGU-EUG Joint Assembly, Nice, France, 06-11 April 2003
- "Kalman filter analysis of boundary layer ozone in Europe with a chemistry transport model" in the Proceedings of 26th NATO/CCMS International technical Meeting on Air Pollution Modeling and Its Applications XVI, held May 2003, Turkey.
- "Hybrid Kalman filter algorithms and a measure of the nonlinearity in atmospheric applications" in the Proceedings of the EGU 1th General Assembly, Nice, France, 25-30 April 2003

### Journal papers

- "Data assimilation of ground-level ozone in Europe with a Kalman filter and chemistry transport-model" published in *Journal of Geophysical Research*, Vol. 109, D10302, May 2004.
- " A Hybrid Kalman filter algorithm for large scale atmospheric chemistry data assimilation " submitted to *Monthly Weather Reviews*.
- " Estimating emissions of ozone precursors in Europe through inverse modeling of ozone and nitrogen observations " submitted to *Journal of Geophysical Research*.

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## LANGUAGE KNOWLEDGE

<b>Romanian</b>	native
<b>Dutch</b>	above average
<b>English</b>	very good

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## REFERENCES

These persons are familiar with my professional qualifications and my character:

**Prof. Dr. A. W. Heemink**

Thesis supervisor

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Delft, February 20, 2006