



Online Publication Chemical Composition

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Project duration:	3 years	

Work package:	6, deliverable 6.5
Task(s):	
Lead beneficiary for this deliverable:	PMOD/WRC
Editors	Dr. Egorova T.
Authors:	Dr. Egorova T.
Quality reviewer:	

Project co-funded by the European Commission within the Seventh Framework		
Dissemination level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	



DOCUMENT CONTROL

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ISSUE RECORD

Version	Date	Author(s)	Reason for modification	Status
3	20110606	Dr. Egorova T.	Rejected by reviewer	Consortium distribution
2	20110215	Dr. Egorova T.	Delay PROBA2 launch	Consortium distribution
1	20101203	Dr. Egorova T.	Initial issue	Consortium distribution

NOTICE

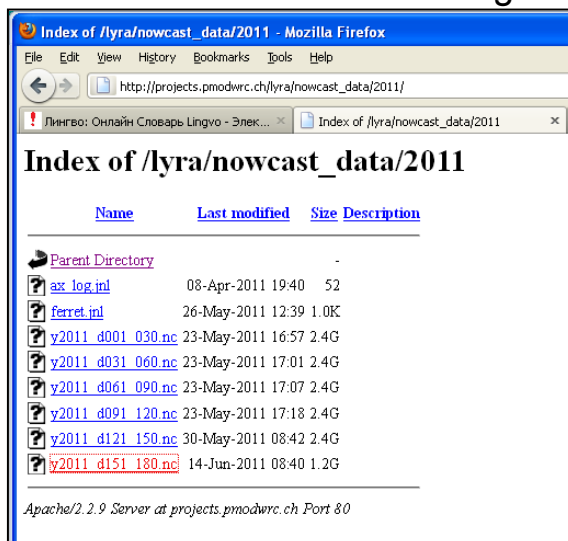
The contents of this document are openly available. Such consent is hereby automatically given to all members who have entered into the SOTERIA Consortium Agreement, dated 2008/12/22 and to the European commission to use and disseminate.

SUMMARY OF CURRENT STATUS

In the framework WP6 of the SOTERIA project PMOD/WRC is responsible for the online publication of the simulated data of the neutral and ionized chemical species in the middle atmosphere.

For this purpose we have developed climate-chemistry-ionosphere model SOCOLi which is based on a general circulation model and includes complete representation of the chemistry of neutral and ionized species in the atmosphere from the ground up to the mesopause (Egorova et al, 2011). To validate the model we have simulated the response of the neutral and charged species in the middle atmosphere to the short-term increase of the solar UV irradiance in January 2004 and severe solar proton event in October-November 2003. The results of the simulations have been compared with the available satellite measurements and other model simulations. The model description and results of the validation solar proton event in October-November 2003 can be found in Egorova et al., 2011 and Funke et al. 2011. Reasonable agreement of the simulated results with observations confirms the applicability of the model for the nowcasting of the neutral and charged species in the middle atmosphere using solar spectral irradiance data. The results of the nowcasting are publically available from our web page (<http://projects.pmodwrc.ch/lyra/>). Data have been published on-line and publicly available at http://projects.pmodwrc.ch/lyra/nowcast_data/2011. The model data are stored in NetCDF format, each file of 2.4 GB contains one month of the simulated data with 2 hours time resolution. The data can be browsed by using specially designed visualization software at http://projects.pmodwrc.ch/lyra/index.php?option=com_content&view=article&id=65&Itemid=83

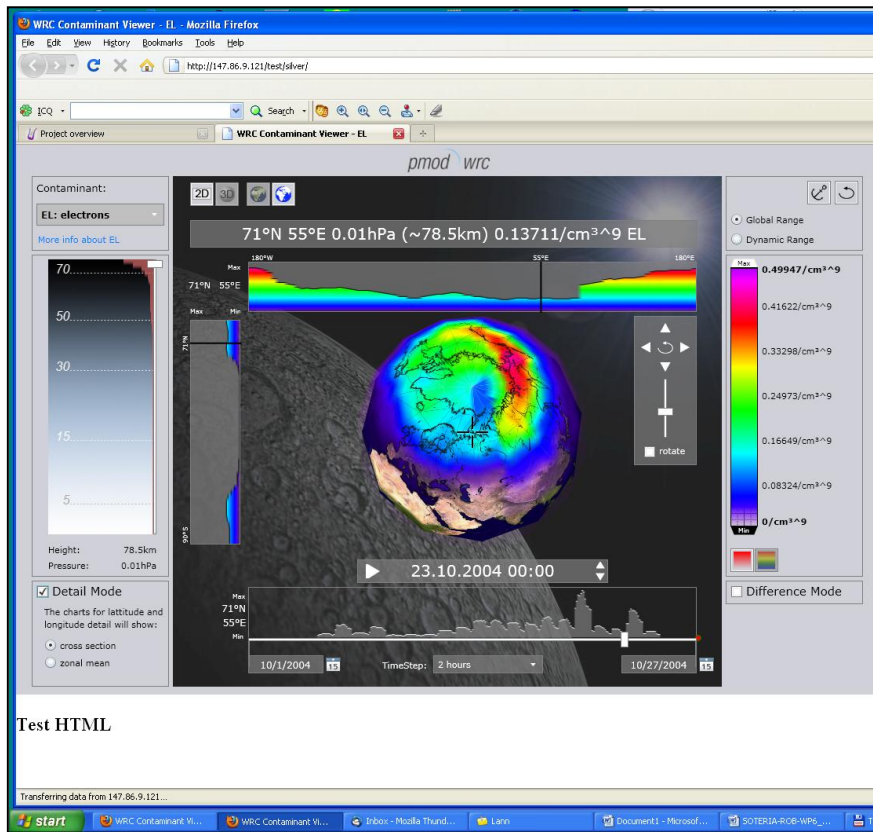
Screen shot of the data storage



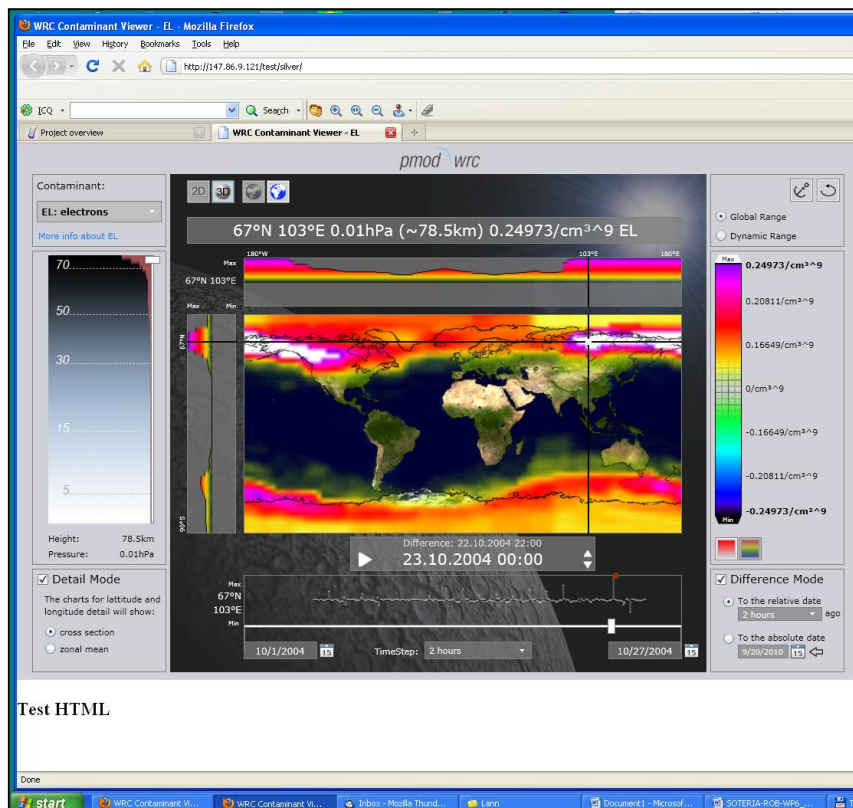
The screenshot shows a Mozilla Firefox browser window displaying the index of data files for 2011. The browser's address bar shows the URL http://projects.pmodwrc.ch/lyra/nowcast_data/2011/. The page title is "Index of /lyra/nowcast_data/2011". Below the title, there is a table with columns for "Name", "Last modified", "Size", and "Description". The table lists several files, including "Parent Directory", "ax_log.ini", "ferret.ini", and several NetCDF files (e.g., "y2011_d001_030.nc", "y2011_d031_060.nc", "y2011_d061_090.nc", "y2011_d091_120.nc", "y2011_d121_150.nc", "y2011_d151_180.nc"). The files are listed with their last modified dates and sizes. At the bottom of the page, it says "Apache/2.2.9 Server at projects.pmodwrc.ch Port 80".

Name	Last modified	Size	Description
Parent Directory	-	-	-
ax_log.ini	08-Apr-2011 19:40	52	
ferret.ini	26-May-2011 12:39	1.0K	
y2011_d001_030.nc	23-May-2011 16:57	2.4G	
y2011_d031_060.nc	23-May-2011 17:01	2.4G	
y2011_d061_090.nc	23-May-2011 17:07	2.4G	
y2011_d091_120.nc	23-May-2011 17:18	2.4G	
y2011_d121_150.nc	30-May-2011 08:42	2.4G	
y2011_d151_180.nc	14-Jun-2011 08:40	1.2G	

Screen shot of the data visualization in “Detail Mode”



Screen shot of the data visualization in “Difference Mode”



**References:**

Egorova, T., Rozanov, E., Ozolin, Y., Shapiro, A., Calisto, M., Peter, T., and Schmutz, W.: The atmospheric effects of October 2003 solar proton event simulated with the chemistry-climate model SOCOL using complete and parameterized ion chemistry, *J. Atmos. Sol.-Terr. Phys.*, 10 73(2–3), 356–365, doi:10.1016/j.jastp.2010.01.009, 2011. 9411, 9412, 9430

B. Funke, A. Baumgaertner, M. Calisto, **T. Egorova**, C. H. Jackman, J. Kieser, A. Krivolutsky, M. L´opez-Puertas, D. R. Marsh, T. Reddmann, E. Rozanov, S.-M. Salmi, M. Sinnhuber, G. P. Stiller, P. T. Verronen, S. Versick, T. von Clarmann, T. Y. Vyushkova, N. Wieters, and J. M. Wissing: Composition changes after the “Halloween” solar proton event: the High-Energy Particle Precipitation in the Atmosphere (HEPPA) model versus MIPAS data intercomparison study. *Atmos. Chem. Phys. Discuss.*, 11, 9407–9514, 2011 www.atmos-chem-phys-discuss.net/11/9407/2011/ doi:10.5194/acpd-11-9407-2011.