

Electronic Supplementary Material 2

Cold and Heat Related Mortality: A Cautionary Note on Current Damage Functions with Net Benefits from Climate Change

Veronika Huber*, Dolores Ibarreta, Katja Frieler

*huber@pik-potsdam.de

Data and code documentation

January 2017

All data and code files can be accessed via: <http://veronikahuber.de/data-and-code/>

Note: The code has been run with Python version 2.7.11. It has not been systematically tested. Its unique purpose has been to produce the results and figures of the related publication. You may report any bugs found to **huber@pik-potsdam.de**

File description:

All Python files used to produce results and illustrations of the publication are listed in Table 1. External input files and the sources of the data they contain are given in Table 2.

Please note that the files should be run in the given order, and file paths need to be adapted.

Table 1. Python files

File name	External input files	Output files	Description
Leemans_Cramer_Database.py	World_Lat_Lon.csv tmean.grd.gz	City_LeemansCramer_Data.csv	- extracts minimum and maximum monthly mean temperatures for capital cities from Leemans & Cramer database
Reanalysis_Part1.py	Martens_Table3.csv	Mortality_extrapolation_Martens.csv Mortality_extrapolation_Green.csv Mortality_extrapolation_AllAges.csv Mortality_extrapolation_BothCorrected.csv Mortality_extrapolation_Tol.csv	- calculates mortality estimates based on new combined effect estimates (see ESM1 Table S1) - determines regression equations using extracted temperature data - extrapolates mortality estimates to all countries where data available - creates Figs. 3 and 4 (+ ESM1 Figs. S2 and S3)
Reanalysis_Part2.py	UN_pop_data.csv FUND_9regions.csv	Region_deaths_Martens.csv Region_deaths_Green.csv Region_deaths_AllAges.csv Region_deaths_BothCorrected.csv Region_deaths_Tol.csv	- prepares population data per country (urban, rural, <65, >65 years) - calculates absolute mortality per country - aggregates according to FUND regions
Plot_MartensRaw.py	Cm_65minus_warm.csv Cm_65minus_cold.csv Cm_65plus_warm.csv Cm_65plus_cold.csv Cm_all_warm.csv Cm_all_cold.csv Rm_warm.csv Rm_cold.csv		- creates Fig. 2
Plot_FUNDRegion.py	Region_deaths_FUND.csv		- creates Fig. 5
Plot_FUNDRegion_StepByStep.py	Region_deaths_FUND.csv		- creates ESM1 Fig. S4
Plot_FUNDRegion_Respiratory.py	Region_deaths_FUND.csv		- creates ESM1 Fig. S5

Table 2. External input data and their sources

File name	Source
World_Lat_Lon.csv	http://opengeocode.org/cude/download.php?file=/home/fashions/public_html/opengeocode.org/download/cow.txt
tmean.grd.gz	http://www.pik-potsdam.de/~cramer/climate.html
Martens_Table3.csv	Extracted from Table 3 of Martens (1998)
UN_pop_data.csv	http://www.un.org/en/development/desa/population/publications/dataset/urban/urbanAndRuralPopulationByAgeAndSex.shtml
FUND_9regions.csv	http://www.fund-model.org/versions
Cm_65minus_warm.csv Cm_65minus_cold.csv Cm_65plus_warm.csv Cm_65plus_cold.csv Cm_all_warm.csv Cm_all_cold.csv Rm_warm.csv Rm_cold.csv	Extracted from Table 2 of Martens (1998)
Region_deaths_FUND.csv	Extracted from Table V of Tol (2002)