

Wind data rescue initiative at the Swedish Meteorological and Hydrological Institute

Lennart Wern (1), Cesar Azorin-Molina (2,3), Erik Engström (1), Sverker Hellström (1), Gangfeng Zhang (2,4,5), Lorenzo Minola (2), and Deliang Chen (2)

(1) Swedish Meteorological and Hydrological Institute, Climate Information and Statistics, Norrköping, Sweden, (2) University of Gothenburg, Department of Earth Sciences - Regional Climate Group, Gothenburg, Sweden, (3) Centro de Investigaciones sobre Desertificación, Consejo Superior de Investigaciones Científicas (CIDE-CSIC), Montcada, Valencia, Spain, (4) State Key Laboratory of Earth Surface Processes and Resource Ecology, Beijing Normal University, Beijing 100875, China, (5) Academy of Disaster Reduction and Emergency Management, Ministry of Civil Affairs and Ministry of Education, Beijing Normal University, Beijing 100875, China

This contribution represents a continuation of “STILLING project: Advances in the compilation and homogenization of historical wind speed data for the assessment of the stilling phenomenon”, previously reported in EGU2018-15160. Under a warming climate, the STILLING project covers a novel research niche on the “stilling” debate (decline in terrestrial wind speed), i.e. rescue, homogenize and analyze for the first time wind speed variability before the 1960s. The main overarching question is: Is stilling a recent phenomenon due to climate change or similar decline trends/cycles occurred in the past? Our scientific leitmotiv is ‘knowing the past wind climate to understand the present “stilling” and better assess future wind speed projections needed for climate change adaptation’.

One of the major uncertainties on the causes driving the stilling over land is mainly due to short availability (i.e. since the 1960s) and low quality of observed wind records as stated by the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC). In this study we present the first steps of a joint initiative between the Swedish Meteorological and Hydrological Institute (SMHI) and the University of Gothenburg aimed at filling the key gap of short availability and low quality of wind datasets, and improve the limited knowledge on the causes driving wind changes in a climate change scenario across Sweden. In particular, this study will show (i) an overview of the action, (ii) the availability of historical wind data in the old weather books at the SMHI archives, and (iii) the strategy adopted to rescue, quality control and homogenize historical wind records. This poster presentation is a flier of a project proposal for the Swedish Research Council Formas.