Geophysical Research Abstracts
Vol. 14, EGU2012-7581-1, 2012
EGU General Assembly 2012

Long-term variations in phenological phases and growing season indexes in the Czech Republic

M. Mozny (1), V. Potop (2), L. Hajkova (1), D. Bares (1), M. Stalmacher (1), M. Trnka (3), L. Bartosova (3), and Z. Zalud (3)

(1) Czech Hydrometeorological Institute, Doksany Observatory, Doksany, Czech Republic (martin.mozny@chmi.cz), (2) Czech University of Life Sciences Prague, Faculty of Agrobiology, Food and Natural Resources, Department of Agroecology and Biometeorology, Prague, Czech Republic, (3) Department of Agrosystems and Bioclimatology, Mendel University in Brno, Zemedelska 1, 61300 Brno, Czech Republic

Phenological phases reflect weather conditions immediately prior to their onset and are therefore very important documentary record of the impact of climate on plants in a particular region. We analyze the results of phenological observations in the Czech Republic in the years 1931-2010. Air temperature increases were associated with an earlier onset of phenological phases; not just the beginning of the growing season but also the interval between successive phenological phases was shorter. Spatial variability of average phenophase onset were executed by GIS methods, the maps use horizontal resolutions of 500 meters.
To quantify the rate and timing of changes in canopy development was utilized Growing Season Index (GSI), which was calculated from conventional meteorological measurements. Finally, we used the GSI index for producing global maps that distinguish regional differences in the current phenological development in the Czech Republic. GSI index can be used in modeling of CO_2 exchange at the interface of biosphere and atmosphere.
We gratefully acknowledge the support of the Ministry of education, youth and sports project OC10010, LD11401 and National Agency for Agriculture Research project Q191C054.