

Publications (h-index=30 (Scopus))

PEER-REVIEWED ARTICLES

2020

Churkina G, Organschi A, Reyer CPO, Ruff A, Vinke K, Liu Z, Reck BK, Graedel TE, & Schellnhuber HJ, Buildings as a global carbon sink. *Nature Sustainability*.

2019

Eisenman TS, **Churkina G**, Jariwala SP, Kumar P, Lovasi GS, Pataki DE, Weinberger KR, Whitlow TH, Urban trees, air quality, and asthma: An interdisciplinary review. *Landscape and Urban Planning* 187, 47-59.

2018

Bonn B, von Schneidmesser E, Butler T, **Churkina G**, Ehlers C, Grote R, Klemp D, Nothard R, Schäfer K, von Stülpnagel A, Kerschbaumer A, Yousefpour R, Fountoukis C, & Lawrence MG, Impact of vegetative emissions on urban ozone and biogenic secondary organic aerosol: Box model study for Berlin, Germany. *Journal of Cleaner Production* 176, 827-841.

2017

Churkina G, Kuik F, Bonn B, Lauer A, Grote R, Tomiak K, Butler TM, Effect of VOC emissions from vegetation on air quality in Berlin during a heatwave. *Environmental Science and Technology* 51 (11), 6120-6130.

Baldacchini C, Castanheiro A, Maghakyan N, Sgrigna G, Verhelst J, Alonso R, Amorim J, Bellan P, Djunisijevic Bojovic D, Breuste J, Bühler O, Cântar I, Cariñanos P, Carriero G, **Churkina G**, Dinca L, Esposito R, Gawronski S, Kern M, Le Thiec D, Moretti M, Ningal T, Rantzoudi E, Sinjur I, Stojanova B, Aničić Urošević M, Velikova V, Zivojinovic I, Sahakyan L, Calfapietra C, Samson R. How does the amount and composition of PM deposited on *Platanus acerifolia* leaves change across different cities in Europe? *Environmental Science and Technology* 51 (3), 1147–1156.

Tigges J, **Churkina G**, Lakes T Modeling above-ground carbon storage: a remote sensing approach to derive individual tree species information in urban settings. *Urban Ecosystems* 20, 97-111.

2016

Churkina G, The role of urbanization in the global carbon cycle. *Frontiers in Ecology and Evolution* 3.

Ma S, **Churkina G**, Gessler A, Wieland R, Yield gap of winter wheat in Europe and sensitivity of potential yield to climate factors. *Climate Research* 67:179-190.

Grote R, Samson R, Alonso R, Amorim JH, Cariñanos P, **Churkina G**, Fares S, Thiec DL, Niinemets Ü, Mikkelsen TN, Paoletti E, Tiwary A, Calfapietra C, Functional traits of urban trees in relation to their air pollution mitigation potential. *Frontiers in Ecology and Environment* 14(10): 543-550.

Kuik F, Lauer A, **Churkina G**, Denier van der Gon HAC, Fenner D, Mar KA, Butler TM, Air quality modelling in the Berlin-Brandenburg region using WRF-Chem v3.7.1: sensitivity to resolution of model grid and input data. *Geoscientific Model Development* 9 (12): 4339-4363.

Hidy D, Barcza Z, Marjanović H, Ostrogović Sever MZ, Dobor L, Gelybó G, Fodor N, Pintér K, **Churkina G**, Running S, Thornton P, Bellocchi G, Haszpra L, Horváth F, Suyker A, Nagy Z, Terrestrial Ecosystem Process Model Biome-BGCMuSo: Summary of improvements and new modeling possibilities. *Geoscientific Model Development* 9 (12): 4405-4437.

Tiwari S, Grote R, **Churkina G**, Butler T, Ozone damage, detoxification and the role of isoprenoids – new impetus for integrated models. *Functional Plant Biology* 43: 324-336.

Bonn B, von Schneidmesser E, Andrich D, Quedenau J, Gerwig H, Lüdecke A, Kura J, Pietsch A, Ehlers C, Klemp D, Kofahl C, Nothard R, Kerschbaumer A, Junkermann W, Grote R, Pohl T, Weber K, Lode B, Schönberger P, **Churkina G**, Butler TM, Lawrence MG (2016) BAERLIN2014 - The influence of land surface types on and the horizontal heterogeneity of air pollutant levels in Berlin. *Atmospheric Chemistry and Physics* 16: 7785-7811.

2015

Churkina G, Grote R, Butler TM, Lawrence M, Natural selection? Picking the right trees for urban greening. *Environmental Science & Policy* 47: 12-17.

2014

Luyssaert S, Jammert M, Stoy PC, Estel S, Pongratz J, Ceschia E, **Churkina G**, Don A, Erb K, Ferlicoq M, Gielen B, Grunwald T, Houghton RA, Klumpp K, Knohl A, Kolb T, Kuemmerle T, Laurila T, Lohila A, Loustau D, McGrath MJ, Meyfroidt P, Moors EJ, Naudts K, Novick K, Otto J, Pilegaard K, Pio CA, Rambal S, Reibmann C, Ryder J, Suyker AE, Varlagin A, Wattenbach M, Dolman AJ, Land management and land-cover change have impacts of similar magnitude on surface temperature. *Nature Climate Change* 4: 389-393.

Schreyer J, Tigges J, Lakes T, **Churkina G**, Using Airborne LiDAR and QuickBird Data for Modelling Urban Tree Carbon Storage and Its Distribution—A Case Study of Berlin. *Remote Sensing* 6, 10636-10655.

Hlásny T, Barcza Z, Barka I, Merganičová K, Sedmák R, Kern A, Pajtík J, Balázs B, Fabrika M, **Churkina G** Future carbon cycle in mountain spruce forests of Central Europe: Modelling framework and ecological inferences. *Forest Ecology and Management*, 328: 55-68.

2013

Rodeghiero M, **Churkina G**, Martinez C, Scholten T, Gianelle D, Cescatti A, Components of forest soil CO₂ efflux estimated from delta¹⁴C values of soil organic matter. *Plant & Soil*, 364: 55-68.

2012

Ma S, **Churkina G** & Trusilova K, Investigating the impact of climate change on crop phenological events in Europe with a phenology model. *International Journal of Biometeorology*, 56 (4): 749-763.

Hidy, D., Barcza, Z., Haszpra, L., **Churkina, G.**, Pintér, K., Nagy, Z., 2012. Development of the Biome-BGC model for simulation of managed herbaceous ecosystems. *Ecological Modelling*, 226, 99-119.

2011

Ma S, **Churkina G**, Wieland R, Gessler A, Optimization and evaluation of the ANTHRO-BGC model for winter crops in Europe. *Ecological Modelling*, 222 (20-22): 3662-3679.

Hlásny T, Barcza Z, Fabrika M, Balázs B, **Churkina G**, Pajtík J, Sedmák R, Turcáni M, Climate change impacts on growth and carbon balance of forests in Central Europe. *Climate Research*, 47(3): 219-236.

2010

Churkina G, Brown D, Keoleian GA, Carbon stored in human settlements: the conterminous US. *Global Change Biology*, 16, 135-143.

Churkina G, Zaehle S, Hughes J, Viovy N, Chen Y, Jung M, Heumann BW, Ramankutty N, Heimann M, Jones C, Interactions between nitrogen deposition, land cover conversion, and climate change determine the contemporary carbon balance of Europe. *Biogeosciences*, 7, 2749-2764

Moffat AM, Beckstein C, **Churkina G**, Mund M, Heimann M, A new methodology for characterizing ecosystem responses to their climatic controls. *Global Change Biology*, 16, 2737-2749.

Luyssaert S, Ciais P, Piao SL, Schulze ED, Jung M, Zaehle S, Schelhaas MJ, Reichstein M, **Churkina G**, Papale D, Abril G, Beer C, Grace J, Loustau D, Matteucci G, Magnani F, Nabuurs GJ, Verbeeck H, Sulkava M, van der Werf GR, Janssens IA, CARBOEUROPE-IP Synthesis Team, The European carbon balance. Part 3: forests. *Global Change Biology*, 16, 1429 – 1450.

Tupek B, Zanchi G, Verkerk PJ, **Churkina G**, Viovy N, Hughes JK, Lindner M, A comparison of alternative modelling approaches to evaluate the European forest carbon fluxes. *Forest Ecology and Management*, 260, 241-251.

Liberloo M, Luyssaert S, Bellassen V, Njakou Djomo S, Lukac M, Calfapietra C, Janssens IA, Hoosbeek MR, Viovy N, **Churkina G**, Scarascia-Mugnozza G, Ceulemans R Bio-Energy Retains Its Mitigation Potential Under Elevated CO₂. *PLoS ONE*, 5, e11648.

2009

Churkina G, Brovkin V, Von Bloh W, Trusilova K, Jung M, and Dentener FJ, Synergy of rising nitrogen depositions and atmospheric CO₂ on land carbon uptake offsets global warming, *Global Biogeochemical Cycles*, 23, GB4027.

Trusilova K, Jung M and **Churkina G**, A note on climate impacts of a potential expansion of urban land in Europe, *Journal of Applied Meteorology and Climatology*, 48, 1971-1980.

Barcza Z, Haszpra L, Somogyi Z, Hidy D, Lovas K, **Churkina G**, and Horvath L, Estimation of the biospheric carbon dioxide balance of Hungary using the BIOME-BGC model, *Quarterly Journal of the Hungarian Meteorological Service*, 113, 203-219.

2008

Churkina G, Modelling carbon cycle of urban systems. *Ecological Modelling*, 216: 107-113.

Vetter M, **Churkina G**, Jung M, Reichstein M, Zähle S, Bondeau A, Chen Y, Ciais P, Feser F, Freibauer A, Geyer R, Jones CD, Papale D, Tenhunen J, Tomelleri E, Trusilova K, Viovy N, and Heimann M. Analyzing the causes and spatial pattern of the 2003 carbon flux anomaly in Europe using seven models. *Biogeosciences*, 5: 561-583.

Trusilova K and **Churkina G**, The response of the terrestrial biosphere to urbanization: land cover conversion, climate, and urban pollution. *Biogeosciences* 5: 1505-1515.

Trusilova K, Jung M, **Churkina G**, Karstens U, Heimann M, and Claussen M, Urbanization impacts on the climate of Europe: Numerical experiments with the PSU/NCAR Mesoscale Model (MM5). *Journal of Applied Meteorology and Climatology*, 47(5): 1442-1455.

Hakkenberg R, **Churkina G**, Rodeghiero M, Börner A, Steinhof A, and Cescatti A, Temperature sensitivity of the turnover times of soil organic matter in forests. *Ecological Applications*, 18: 119-131.

Richardson AD, Mahecha MD, Falge E, Kattge J, Moffat AM, Papale D, Reichstein M, Stauch VJ, Braswell BH, **Churkina G**, Kruijt B, Hollinger DY. Statistical properties of random CO₂ flux measurement uncertainty inferred from model residuals. *Agricultural and Forest Meteorology*, 148(1): 38-50.

2007

Churkina G, Trusilova K, Vetter M, and Dentener FJ. Contributions of nitrogen deposition and forest re-growth to land carbon uptake. *Carbon Balance and Management*, 2:5.

Jung M, Vetter M, Herold M, **Churkina G**, Reichstein M, Zaehle S, Ciais P, Viovy N, Bondeau A, Chen Y, Trusilova K, Feser F, and Heimann M. Uncertainties of modelling GPP over Europe: A systematic study on the effects of using different drivers and terrestrial biosphere models. *Global Biogeochemical Cycles* 21, GB4021.

Jung M, Le Maire G, Zaehle S, Luysaert S, Vetter M, **Churkina G**, Ciais P, Viovy N, and Reichstein M. Assessing the ability of three land ecosystem models to simulate gross carbon uptake of forests from boreal to Mediterranean climate in Europe. *Biogeosciences*, 4: 647-656.

Moffat AM, Papale D, Reichstein M, Barr AG, Braswell BH, **Churkina G**, Desai AR, Falge E, Gove JH, Heimann M, Hollinger DY, Hui D, Jarvis AJ, Kattge J, Noormets A, Richardson AD, and Stauch VJ, Comprehensive comparison of gap filling techniques for net carbon fluxes. *Agricultural and Forest Meteorology*, 147(3): 209-232.

Hidy D, Barcza Z, Haszpra L, **Churkina G**, Trusilova K. Parameter estimation for grassland carbon cycle using nonlinear inversion of Biome-BGC. *Cereal Research Communications*. 35(2 Part 1): 453-456.

Hidy D, Barcza Z, Haszpra L, and **Churkina G**, Modelling the CO₂ exchange of grasslands (Gyepék szén-dioxid forgalmának modellezése). *Légkör*, 51(3): 33-36.

2006

Jung M, Henkel K, Herold M, and **Churkina G**, Exploring synergies of land cover products for carbon cycle modelling. *Remote Sensing of Environment*, 101: 534-553.

Reithmaier LM, Göckede M, Markkanen T, Knohl A, **Churkina G**, Rebmann C, Buchmann N, and Foken T, Use of remotely sensed land use classification for a better evaluation of micrometeorological flux measurement sites. *Theoretical and Applied Climatology*, 84, 219-233.

2005

Churkina G, Schimel DS, Braswell BH, and Xiao X, Spatial analysis of growing season length control over net ecosystem exchange. *Global Change Biology*, 11: 1777-1787.

Vetter M, Wirth C, Böttcher H, **Churkina G**, Schulze ED, Wutzler T, and Weber E, Partitioning direct and indirect human-induced effects on carbon sequestration of managed coniferous forests using model simulations and forest inventories, *Global Change Biology*, 11: 810-827.

2003

Churkina G, Tenhunen J, Thornton P, Elbers J, Erhard M, Falge E, Grünwald T, Kowalski A, Rannik U, and Sprinz D, Analyzing the ecosystem carbon dynamics of four European coniferous forests using a biogeochemistry model, *Ecosystems* 6: 168-184.

2001

Schimel DS, House J. I., Hibbard K. A., Bousquet P., Ciais P., Peylin P., Braswell BH, Apps MJ, Baker D, Bondeau A, Canadell JG, **Churkina G**, Cramer W, Denning AS, Field CB, Fridlingstein P, Goodale C, Heimann M, Houghton RA, Melillo JM, Moore III B, Murdiyarso D, Noble I, Pacala SW, Prentice IC, Raupach MR, Rayner PJ, Scholes RJ, Steffen WL, and Wirth C. Recent patterns and mechanisms of carbon exchange by terrestrial ecosystems. *Nature* 414: 169-172.

2000

Churkina G and Running SW, Investigating the balance between timber harvest and productivity of the global coniferous forests under global change, *Climatic Change* 47(1/2): 167-191.

1999

Churkina G, Running SW, and Schloss A, and the other participants of Potsdam '95, Comparing global models of terrestrial net primary productivity (NPP): The importance of water availability to primary productivity in global terrestrial models, *Global Change Biology* 5 (Suppl.1): 46-55.

Cramer W, Kicklighter DW, Bondeau A, Moore III B, **Churkina G**, Nemry B, Ruimy A, Schloss A, and the other participants of Potsdam '95, Comparing global models of terrestrial net primary productivity (NPP): Overview and key results. *Global Change Biology* 5 (Suppl. 1): 1-15.

1998

Churkina G and Running SW, Contrasting environmental controls on the estimated productivity of different biomes, *Ecosystems* 1: 206-215.

1995

Churkina G and Svirezhev Y, Dynamics and forms of ecotone under the impact of climate change: Mathematical approach. *Journal of Biogeography* 22: 565-569.

1992

Churkina G, Ethics of global ecology (in Russian). *Natural Science and Philosophy*, Russian Academy of Science.

PER-REFEREED BOOKS, ENCYCLOPEDIA, AND SPECIAL REPORTS

In preparation _____

Churkina G. Urban Areas and Global Environmental Change: Physical and Biogeochemical Feedbacks, book commissioned by the Cambridge University Press.

2017 _____

Calfapietra C, Guidolotti G, **Churkina G**, Grote R Urban tree physiology: methods and tools. in Ferrini F, Konijnendijk van den Bosch C, Fini A (Eds) *Routledge Handbook of Urban Forestry*. Routledge.

2011 _____

Barcza Z, Bondeau A, **Churkina G**, Ciais P, Czóbel S, Galybó G, Grosz B, Haszpra L, Hidy D, Horváth L, Machon A, Pásztor L, Somogyi Z, Van Oost K Model based biospheric greenhouse gas balance of Hungary. Pages: 295-332 in: Haszpra L (Ed) *Atmospheric greenhouse gases: The Hungarian perspective*. Springer, New York.

Grosz B, Galybó G, **Churkina G**, Haszpra L, Horváth L, Kern A, Kljun N, Machon A, Pásztor L, Barcza Z Arable lands. . Pages: 263-294 in: Haszpra L (Ed) *Atmospheric greenhouse gases: The Hungarian perspective*. Springer, New York.

Hidy D, Machon A, Haszpra L, Nagy Z, Pintér K, **Churkina G**, Grosz B, Horváth L, Barcza Z Grasslands. Pages: 229-252 in: Haszpra L (Ed) *Atmospheric greenhouse gases: The Hungarian perspective*. Springer, New York.

2013 _____

Churkina G, An introduction to carbon cycle science. Pages 24-51 in: Brown DG, Robinson DT, French NHF & Reed BC (Eds) *Land use and the carbon cycle: Advances in Integrated Science, Management, and Policy*. Cambridge University Press.

2012 _____

Churkina G, Carbonization of urban areas. Pages 369-382 in: Lal R, Lorenz K, Hüttl RFJ, Schneider BU, von Braun J (Eds) *Recarbonization of the Biosphere - Ecosystems and the Global Carbon Cycle*. Springer.

Churkina G, Carbon cycle of urban ecosystems. Pages 315-330 in: Lal R, Augustin B (Eds) *Carbon Sequestration in Urban Ecosystems*. Springer, New York.

2008 _____

Heimann, M, Roedenbeck C, and **Churkina G**, Multiple constraint estimates of the European carbon balance. Pages 361-376 in A. J. Dolman, R. Valentini, and A. Freibauer, (Eds). *The continental-scale greenhouse gas balance of Europe*. Springer, New York.

2005 _____

Schimel D, **Churkina G**, and Braswell B. Remembrance of weather past: ecosystem response to climate variability, *A history of atmospheric CO₂ and its effects on plants, animals, and ecosystems* in Ehleringer J, Cerling, and Dearing (Eds), Springer, New York.

2003 _____

Apps MJ, Artaxo P, Barrett D, Canadell JG, Cescatti A, **Churkina G**, Ciais P, Cienciala E, Cox PM, Field CB, Heimann M, Holland E, Houghton RA, Jaramillo V, Joos F, Kanninen M, Kaufmann JB, Kurz W, Lasco RD, Law BE, Mahli Y, McMurtrie R, Morikawa Y, Murdiyarso D, Nilsson S, Ogana W, Peylin P, Sala OE, Schimel DS, Smith P, Zhou G, and Zimov S, Science statement on current scientific understanding of the processes affecting terrestrial carbon stocks and human influences upon them. *IPCC special report*, Geneva, pp. 29.

2001 _____

Churkina G, Biography of Vladimir Vernadsky, in "The Earth System: biological and ecological dimensions of global environmental change" in Mooney H and Canadell J (Eds), *Encyclopedia of Global Environmental Change*, vol. 2, John Wiley and Sons Ltd.

Churkina G, Biocenosis, in “The Earth System: biological and ecological dimensions of global environmental change” in Mooney H and Canadell J (Eds), *Encyclopedia of Global Environmental Change*, vol. 2, John Wiley and Sons Ltd.

Churkina G, Noosphere in “The Earth System: biological and ecological dimensions of global environmental change” in Mooney H and Canadell J (Eds), *Encyclopedia of Global Environmental Change*, vol. 2, John Wiley and Sons Ltd.

NON-REFEREED PUBLICATIONS

2016

Pace R, **Churkina G**, and Rivera M, How green is a "Green City"? A review of existing indicators and approaches; Working Paper, Institute for Advanced Sustainability Studies (IASS): Potsdam.

2009

Trusilova K, Trembath J, and **Churkina G** (2009), Parameter estimation and validation of the terrestrial ecosystem model BIOME-BGC using eddy -covariance flux measurements, Technical Reports: 16, Max-Planck Institute for Biogeochemistry, Jena, pp. 60.

Chen Y, **Churkina G**, Heimann M, Constructing a consistent historical climate data set for the European domain. Technical Reports: 15, Institute for Biogeochemistry, Jena, pp. 30.

2008

Trusilova K and **Churkina G**, The terrestrial ecosystem model GBIOME-BGCv1. Technical Reports: 13, Institute for Biogeochemistry, Jena, pp. 60.

Barcza Z, Haszpra L, Hidy D, **Churkina G**, Horváth L, Magyarország bioszférikus szén-dioxid mérlegének becslése a BIOME-BGC modellel (engl. ESTIMATION OF THE BIOSPHERIC CARBON DIOXIDE BUDGET OF HUNGARY USING THE BIOME-BGC MODEL). "Klíma-21 füzetek", Klímaváltozás-Hatások-Válaszok. 52, 83-91.

2007

Chen Y, **Churkina G**, Heimann M, A comparison of regional climate variables between various data sources. Technical Reports: 8, Institute for Biogeochemistry, Jena, pp. 36.

1998

Churkina G, Analyzing climatic and human influences on global terrestrial productivity, Dissertation, University of Montana, Missoula, pp. 98.

1995

Cramer W, **Churkina G**, et al. (1995). Net Primary Productivity Model Intercomparison Activity (NPP). *IGBP/GAIM Report Series: 5* (Eds. KA Hibbard and D Sahagian), pp. 42.