

**Publications (peer reviewed)**

- Ambus P., Zechmeister-Boltenstern S., **Butterbach-Bahl K.**, 2006 Sources of nitrous oxide emitted from European forest soils. *Biogeosciences*, 3, 135-145.
- Barton L., Kiese R., Gatter D., **Butterbach-Bahl K.**, Buck R., Hinz C., Murphy D.V., 2008, Nitrous oxide emissions from a cropped soil in a semi-arid climate. *Global Change Biol.*, 14, 177-192.
- Blagodatsky S.A., Kesik M., Papen H., **Butterbach-Bahl K.**, 2004, Nitrogen oxide and nitrous oxide production by the *Alcaligenes faecalis parafaecalis* culture: the influence of pH and aeration. *Eurasian Soil Science* 37, 107-110.
- Blagodatsky S.A., Kesik M., Papen H., **Butterbach-Bahl K.**, 2005, Production of NO and N<sub>2</sub>O by the heterotrophic nitrifier *Alcaligenes faecalis parafaecalis* under varying conditions of oxygen saturation. *Geomicrobiology*, 23, 165-176.
- Boyer E.W., Alexander R.B., Parton W.J., Li C., **Butterbach-Bahl K.**, Donner S.D., Skaggs R.W., 2006, Modeling denitrification in terrestrial and aquatic ecosystems at regional scales: current approaches and needs. *Ecol. Applic.*, 16, 2123-2142.
- Breuer L., Papen H., **Butterbach-Bahl K.**, 2000, N<sub>2</sub>O-emission from tropical forest soils of Australia. *Journal of Geophysical Research*, 105, 26353 – 26378.
- Breuer L., Kiese R., **Butterbach-Bahl K.**, 2002, Temperature and moisture effects on nitrification rates in tropical rain forest soils. *Soil Science Society American Journal*, 66, 834-844.
- Breuer L., **Butterbach-Bahl K.**, 2005, Local temperature optimum of N<sub>2</sub>O-production rates in tropical rain forest soils of Australia. *Australian J. Agric. Res.*, 43, 1-6.
- Brümmer C., Brüggemann N., **Butterbach-Bahl K.**, Falk U., Szarzynski J., Vielhauer K., Wassmann R., Papen H., 2008, Soil-atmosphere exchange of N<sub>2</sub>O and NO in near-natural savanna and agricultural land in Burkina Faso (W. Africa). *Ecosystems* 11, 582-600.
- Butterbach-Bahl K.**, Papen H., Rennenberg H., 1997a, Impact of gas transport through rice cultivars on methane emission from rice paddy fields. *Plant, Cell and Environment*, 20, 1175-1183.
- Butterbach-Bahl K.**, Gasche R., Breuer L., Papen H., 1997b, Fluxes of NO and N<sub>2</sub>O from temperate forest soils: impact of forest type, N deposition and of liming on the NO and N<sub>2</sub>O emissions. *Nutrient Cycling in Agroecosystems*, 48, 79-90.
- Butterbach-Bahl K.**, Papen H., 1998a, Biogenic sources and sinks of CH<sub>4</sub> in arable land in relation to fertilization and drainage. In: Freibauer A., Kaltschmitt M. (Hrsg.), *Biogenic emissions of greenhouse gases caused by arable and animal agriculture – measurement technologies and emission factors*. Workshop at ECN PETTEN, 80-85, Universität Stuttgart.
- Butterbach-Bahl K.**, Gasche R., Huber C., Kreutzer K., Papen H., 1998c, Impact of nitrogen input by wet deposition on N-trace gas fluxes and CH<sub>4</sub>-oxidation in spruce forest ecosystems of the temperate zone in Europe. *Atmospheric Environment*, 32, 559-564.
- Butterbach-Bahl K.**, Papen H., Rennenberg H., 2000a, Scanning electron microscopy analysis of the aerenchyma in two rice cultivars. *Phyton*, 40, 43-55.
- Butterbach-Bahl K.**, Stange F., Papen H., Grell G., Li C., 2000b, Impact of changes in temperature and precipitation on N<sub>2</sub>O and NO emissions from forest soils. In: Van Ham J., Baede A.P.M., Meyer L.A., Ybema R. (Hrsg.), *Non-CO<sub>2</sub> Greenhouse Gases: Scientific Understanding, Control and Implementation*, 165-171, Kluwer Academic Publishers, Dordrecht.
- Butterbach-Bahl K.**, Stange F., Papen H., Li C., 2001, Regional inventory of nitric oxide and nitrous oxide emissions for forest soils of Southeast Germany using the biogeochemical model PnET-N-DNDC, *Journal of Geophysical Research*, 106, 34155-34166.
- Butterbach-Bahl K.**, Papen H., 2002, Four years continuous record of CH<sub>4</sub>-exchange

- between the atmosphere and untreated and limed soil of a N-saturated spruce and beech forest ecosystem in Germany. *Plant and Soil*, 240, 77-90.
- Butterbach-Bahl K.**, 2002, Exchange of trace gases at the forest floor atmosphere interface: CH<sub>4</sub>. In: Gasche R., Papen H., Rennenberg H. (Hrsg.), *Trace Gas Exchange in Forest Ecosystems*, Kluwer, Dordrecht, The Netherlands, 141-156.
- Butterbach-Bahl K.**, Breuer L., Gasche R., Willibald G., Papen H., 2002, Exchange of trace gases between soils and the atmosphere in Scots pine forest ecosystems of the North Eastern German Lowlands, 1. Fluxes of N<sub>2</sub>O, NO/NO<sub>2</sub> and CH<sub>4</sub> at forest sites with different N-deposition. *Forest Ecology and Management*, 167, 123-134.
- Butterbach-Bahl K.**, Willibald G., Papen H., Gasche R., 2002, Exchange of N-gases at the spruce and beech sites at the Höglwald Forest – A summary. *Plant and Soil*, 240, 117-123.
- Butterbach-Bahl K.**, Rothe A., Papen H., 2002, Effect of tree distance on N<sub>2</sub>O- and CH<sub>4</sub>-fluxes from soils in temperate forest ecosystems. *Plant and Soil*, 240, 91-103.
- Butterbach-Bahl K.**, Willibald G., Papen H., 2002, Soil core method for direct simultaneous determination of N<sub>2</sub> and N<sub>2</sub>O emissions from forest soils. *Plant and Soil*, 240, 105-116.
- Butterbach-Bahl K.**, Kesik M., Miehle P., Papen H., Li C., 2002, Calculation of regional budgets of N-trace gas emissions from soils using mechanistic models: results from a case study for Saxony, Germany. Van Ham J., Baede A.P.M., Guicherit R., Williams-Jacobse J.G.F.M. (eds.), *Non-CO<sub>2</sub> Greenhouse Gases: Scientific understanding, control options and policy aspects*, Millpress, Rotterdam, Netherlands, 119-124.
- Butterbach-Bahl K.**, Kesik M., Miehle P., Papen H., Li C., 2004. Quantifying the regional source strength of N-trace gases across agricultural and forest ecosystems with process based models. *Plant and Soil*, 260, 311-329.
- Butterbach-Bahl K.**, Kock M., Willibald G., Hewett B., Buhagiar S., Papen H., Kiese R., 2004. Temporal variations of fluxes of NO, NO<sub>2</sub>, N<sub>2</sub>O, CO<sub>2</sub> and CH<sub>4</sub> in a tropical rain forest ecosystem. *Global Biogeochemical Cycles*, 18, doi:10.1029/2004GB002243.
- Butterbach-Bahl K.**, Kiese R. 2005. Significance of forests as sources for N<sub>2</sub>O and NO. In: *Trees and Soil Interactions. Implications to Global Climate Change* (D. Binkley and O. Menyailo, eds.), pp. 173-192, Kluwer Academic Publishers, Dordrecht, The Netherlands.
- Butterbach-Bahl K.**, Kiese R. 2005. Prozessorientierte Modellierung des N-Kreislauf in naturnahen Ökosystemen. *Beitr. Forstwirtsch. U. Landsch.ökol.* 38, 113-119.
- Butterbach-Bahl K.**, Kahl M., Mykhayliv L., Werner C., Kiese R., Li C., 2008, A European wide inventory of soil NO emissions using the biogeochemical models DNDC/Forest DNDC. *Atmospheric Environment*, in press.
- Byrne K.A., Farrell E.P., Papen H., **Butterbach-Bahl K.**, 2000, Carbon dioxide and methane emissions in forested and virgin blanket peatland in the west of Ireland. *Verhandlungen der Internationalen Vereinigung für theoretische und angewandte Limnologie*, 27, 1387-1390.
- Byrne K.A., Farrell E.P., Papen H., **Butterbach-Bahl K.**, 2001, The Influence of Temperature on Carbon Dioxide Production in Laboratory Columns of Virgin and Forested Blanket Peat. *Intern. Peat Journal*, 11, 35 - 42.
- Dannenmann M., Butterbach-Bahl K., Gasche R., Willibald G., Papen H., 2008, Dinitrogen emissions and the N<sub>2</sub>:N<sub>2</sub>O emission ratio of a Rendzic Leptosol as influenced by pH and forest thinning. *Soil Biol. Biochem.* In press.
- Del Grosso S.J., Parton W.J., Mosier A.R., Ojima D.S., Potter C.S., Boroken W., Brumme R., **Butterbach-Bahl K.**, Crill P.M., Dobbie K., Smith K.A., 2000, General CH<sub>4</sub> oxidation model and comparison of CH<sub>4</sub> oxidation in natural and managed systems. *Global Biogeochemical Cycles*, 14, 999-1020.
- De Vries W., Kros H., Kuikman P., Velthof G., Cees Voogd J., Wieggers R., **Butterbach Bahl K.**, Denier van der Gon H., Van Amstel A., 2005, Use of measurements and

- models to improve the national IPCC based assessments of soil emissions of nitrous oxide. *Environm. Sciences*, 2, 217-233.
- De Vries W., Oenema O., **Butterbach-Bahl K.**, Denier van der Gon H., 2007, The impact of atmospheric nitrogen deposition on the exchange of carbon dioxide, nitrous oxide and methane from European forests. In Reay D., Hewitt N., Grace J., Smith K. (eds.), *Greenhouse Gas Sinks*, 249-283 pp., CAPI publish.
- Dittert K., Lampe C., Gasche R., **Butterbach-Bahl K.**, Wachendorf M., Papen H., Sattelmacher B., Taube F., 2005, Short-term effects of single or combined application of mineral N fertilizer and cattle slurry on the fluxes of the radiatively active trace gases from grassland soil. *Soil Biol. Biochem.* 37, 1665-1674.
- Falge E., Reth S., Brüggemann N., **Butterbach-Bahl K.**, Goldberg V., Oltchev A., Schaaf S., Spindler G., Stiller B., Queck R., Köstner B., Bernhofer C., 2005, Comparison of surface energy exchange models with eddy flux data in forest and grassland ecosystems of Germany. *Ecological Modelling*, 188, 174-216.
- Gasche R., **Butterbach-Bahl K.**, Papen H., 2002, Development and application of a method for determination of net nitrification rates. *Plant and Soil*, 240, 57-65.
- Groffman P.M., Brumme R., **Butterbach-Bahl K.**, Dobbie K.E., Mosier A.R., Ojima D., Papen H., Parton W.J., Smith K.A., Wagner-Riddle C., 2000, Evaluating annual nitrous oxide fluxes at the ecosystem scale. *Global Biogeochemical Cycles*, 14, 1061-1070.
- Groffman P.M., Altabet M.A., Böhlke J.K., **Butterbach-Bahl K.**, David M.B., Firestone M.K., Giblin A.E., Kana T.M., Nielsen L.P., Voytek M.A., 2006, Methods for measuring denitrification: Diverse approaches to a difficult problem. *Ecological applications*, 16, 2091-2122.
- Herman F., Smidt S., **Butterbach-Bahl K.**, Englisch M., Gebetsroither E., Jandl R., Katzensteiner K., Lexer M., Strebl F., Zechmeister-Boltenstern S., 2007, Modeling of Nitrogen Dynamics in an Austrian Alpine Forest Ecosystem on Calcareous Soils: A Scenario-Based Risk Assessment under Changing Environmental Conditions. *TheScientificWorldJournal*, 7, 159-165.
- Holst J., Liu C., Brüggemann N., **Butterbach-Bahl K.**, Zheng X., Wang Y., Han S., Yao Z., Yue J., Han X., 2007, Microbial N turnover and N-oxides (N<sub>2</sub>O/NO/NO<sub>2</sub>) fluxes in a semi-arid grassland of Inner Mongolia as influenced by grazing intensity. *Ecosystems*, DOI: 10.1007/s10021-007-9043-x
- Holst J., Liu C., Yao Z., Brüggemann N., Zheng X., Han X., **Butterbach-Bahl K.**, 2007, Importance of point sources on regional nitrous oxide fluxes in semi-arid steppe of Inner Mongolia, China. *Plant and Soil*, 296, 209-226.
- Holst J., Liu C., Yao Z., Brüggemann N., Zheng X., Giese M., **Butterbach-Bahl K.**, 2008, Fluxes of nitrous oxide, methane and carbon dioxide during freezing–thawing cycles in an Inner Mongolian steppe. *Plant and Soil* 308, 105-117.
- Ingwersen J., **Butterbach-Bahl K.**, Gasche R., Richter O., Papen H., 1999, Barometric process separation (BaPS): New method to quantify gross nitrification, denitrification, and N<sub>2</sub>O sources in soil. *Soil Science Society of America Journal*, 63, 117-128.
- Jandl R., Herman F., Smidt S., **Butterbach-Bahl K.**, Englisch M., Katzensteiner K., Lexer M., Strebl F., Haberhauer G., Zechmeister-Boltenstern S., 2007, Nitrogen dynamics of a mountain forest on dolomitic limestone – A scenario based risk assessment. *Environm. Pollut.*, in press
- Jenssen M., **Butterbach-Bahl K.**, Hofmann G., Papen H., 2000, Modellierung der Beziehungen zwischen der Emission von N-Spurengasen aus Waldböden und den Vegetationsstrukturen in Kiefernwaldökosystemen des nordostdeutschen Tieflands. *Beiträge Forstwirtschaft und Landschaftsökologie*, 34, 121-127.
- Jenssen M., **Butterbach-Bahl K.**, Hofmann G., Papen H., 2002, Exchange of trace gases between soils and the atmosphere in Scots pine forest ecosystems of the North Eastern German Lowlands 2. A novel approach to scale up N<sub>2</sub>O- and NO-fluxes from forest soils by modeling their relationships to vegetation structure. *Forest*

- Ecology and Management, 167, 135-147.
- Jenssen M., Hofmann G., Anders S., **Butterbach-Bahl K.**, Papen H., 2002, Flächenhafte Quantifizierung von N-Spurengas-Emissionen in Wäldern. In: Umweltrelevante Spurengase in der Land- und Forstwirtschaft: Herausforderung für Wissenschaft, Politik und Praxis. Agrarspectrum, 34, 139-144, DLG-Verlag, Frankfurt (Main) .
- Kesik M., Ambus P., Baritz R., Brüggemann N., **Butterbach-Bahl K.**, Damm M., Duyzer J., Horváth L., Kiese R., Kitzler B., Leip A., Li C., Pihlatie M., Pilegaard K., Seufert G., Simpson D., Skiba U., Smiatek G., Vesala T., Zechmeister-Boltenstern S., 2005, Inventories of N<sub>2</sub>O and NO emissions from European forest soils. Biogeosciences, 2, 353-375.
- Kesik M., Blagodatski S., Papen H., **Butterbach-Bahl K.**, 2006, Effect of pH, temperature and substrate on N<sub>2</sub>O, NO and CO<sub>2</sub> production by *Alcaligenes faecalis* p. J. Applied Microbiol. 101, 655-667.
- Kesik M., Brüggemann N., Forkel R., Knoche R., Li C., Seufert G., Simpson D., **Butterbach-Bahl K.**, 2006, Future Scenarios of N<sub>2</sub>O and NO emissions from European forest soils. J. Geophys. Res., 111, G02018, doi:10.1029/2005JG000115
- Kiese R., **Butterbach-Bahl K.**, 2002, N<sub>2</sub>O and CO<sub>2</sub> emissions from three different tropical forest sites in the wet tropics of Queensland, Australia. Soil Biol. Biochem., 34, 975-987.
- Kiese R., Papen H., **Butterbach-Bahl K.**, Breuer L., 2002, N<sub>2</sub>O-emission from tropical rain forest soils of the Wet Tropics, Queensland, Australia. Van Ham J., Baede A.P.M., Guicherit R., Williams-Jacobse J.G.F.M. (eds.), Non-CO<sub>2</sub> Greenhouse Gases: Scientific understanding, control options and policy aspects, Millpress, Rotterdam, Netherlands, 125-130.
- Kiese R., Papen H., Zumbusch E., **Butterbach-Bahl K.**, 2002, Nitrification activity in tropical rain forest soils of the Coastal Lowlands and Atherton Tablelands, Queensland, Australia. Plant Nutrition and Soil Science 165, 682-685.
- Kiese R., Hewett B., Graham A., **Butterbach-Bahl K.**, 2003, Seasonal variability of N<sub>2</sub>O-emissions and CH<sub>4</sub>-uptake from/ by a tropical rainforest soil of Queensland, Australia. Global Biogeochemical Cycles, 17, 1043, doi: 10.1029/2002GB002014.
- Kiese R., Li C., Hilbert W., Papen H., **Butterbach-Bahl K.**, 2005, Regional application of PnET-N-DNDC for estimating the N<sub>2</sub>O source strength of tropical rainforests in the Wet Tropics of Australia. Global Change Biology 11, 128-144.
- Kiese R., **Butterbach-Bahl K.**, 2005, Klimarelevanz erhöhter Stickstoffeinträge in Waldökosysteme. Beitr. Forstwirtsch. U. Landsch.ökol. 38, 127-131.
- Kiese R., Hewett B., **Butterbach-Bahl K.**, 2008, Seasonal dynamic of gross nitrification and N<sub>2</sub>O emissions at two tropical rainforest sites in Queensland, Australia. Plant and Soil, DOI 10.1007/s11104-007-9468-1.
- Kiese R., Wochele S., **Butterbach-Bahl K.**, 2008, Site specific and regional estimates of methane uptake by tropical rainforest soils in north eastern Australia. Plant and Soil, DOI 10.1007/s11104-008-9545-0.
- Kitzler B., Zechmeister-Boltenstern S., Holtermann C., Skiba U., **Butterbach-Bahl K.**, 2006, Nitrogen oxides emission from two beech forests subject to different nitrogen loads. Biogeosciences, 3, 293-310.
- Kitzler B., Zechmeister-Boltenstern S., Holtermann C., Skiba U., **Butterbach-Bahl K.**, 2006, Controls over N<sub>2</sub>O, NO and CO<sub>2</sub> fluxes in a calcareous mountain forest soil. Biogeosciences 3, 383-395.
- Li C., Aber J., Stange F., **Butterbach-Bahl K.**, Papen H., 2000, A process oriented model of N<sub>2</sub>O and NO emissions from forest soils: 1, Model development. Journal of Geophysical Research, 105, 4369-4384.
- Li C., Frohling S., **Butterbach-Bahl K.**, 2005, Carbon Sequestration Can Increase Nitrous Oxide Emissions. Climatic Change, 72, 321-338.
- Liu C., Holst J., Brüggemann N., **Butterbach-Bahl K.**, Yao Z., Yue J., Han S., Han X., Krümmelbein J., Horn R., Zheng X., 2007, Winter grazing reduces methane uptake by soils of a typical semi-arid steppe in Inner Mongolia, China. Atmospheric

- Environment, 41, 5948-5958.
- Livesley SJ, Kiese R, Graham J, Weston CJ, **Butterbach-Bahl K**, Arndt SK, 2008, Trace gas flux and the influence of short-term soil water and temperature dynamics in Australian sheep grazed pastures of differing productivity. Plant and Soil, in press.
- Norman J., Jansson P.E., Farahbakhshazad N., Butterbach-Bahl K., Li C., Klemmedtsson, 2008, Simulation of NO and N<sub>2</sub>O emissions from a spruce forest during a freeze/thaw event using an N-flux sub-model from the PnET-N-DNDC model integrated to CoupModel. Ecological Modelling, in press.
- Papen H., Hermann H., Daum M., **Butterbach-Bahl K.**, 1998, Emission von N-Spurengasen aus den Böden. In: Raspe S., Feger K.H., Zöttl H.W. (Hrsg.), Ökosystemforschung im Schwarzwald, 260-268, Ecomed-Verlag, Landsberg.
- Papen H., **Butterbach-Bahl K.**, 1999, A 3-year continuous record of nitrogen trace gas fluxes from untreated and limed soil of a N-saturated spruce and beech forest ecosystem in Germany, 1. N<sub>2</sub>O emissions. Journal of Geophysical Research, 104, 18487-18503.
- Papen H., Daum M., Steinkamp R., **Butterbach-Bahl K.**, 2001, N<sub>2</sub>O- and CH<sub>4</sub>-Fluxes from Soils of a N-limited and N-fertilized Spruce Forest Ecosystem of the Temperate Zone. Journal Applied Botany, 75, 159-163.
- Papen H., **Butterbach-Bahl K.**, Gasche R., Willibald G., 2004, Waldumbau und seine Auswirkungen auf den Biosphäre-Atmosphäre-Austausch von N<sub>2</sub> sowie klimawirksamen N-Spurengasen (N<sub>2</sub>O, NO, NO<sub>2</sub>): Ergebnisse aus dem Nordostdeutschen Tiefland. Beitr. Forstwirtschaft. u. Landschaftsökol., 38, 68-73.
- Papen H., Rosenkranz P., **Butterbach-Bahl K.**, Gasche R., Willibald G., Brüggemann N. 2005. Effects of tree species on C- and N-cycling and biosphere-atmosphere exchange of trace substances in forests. In: Trees and Soil Interactions. Implications to Global Climate Change (D. Binkley and O. Menyailo, eds.), pp. 165-172, Kluwer Academic Publishers, Dordrecht, The Netherlands.
- Papen H., **Butterbach-Bahl K.**, Gasche R. 2005. Auswirkungen erhöhten N-Eintrags auf mikrobielle N-Umsetzungsprozesse in Waldböden: Methoden und Ergebnisse. Beitr. Forstwirtschaft. U. Landsch.ökol. 39, 120-126.
- Peltoniemi M., Thürig E., Ogle S., Palosuo T., Schrumpf M., Wutzler T., **Butterbach-Bahl K.**, Chertov O., Komarov A., Mikhailov A., Gärdenäs A., Perry C., Liski J., Smith P., Mäkipää, R., 2007, Models in country scale carbon accounting of forest soils. Silva Fennica 41,3, 575-602.
- Pilegaard K., Skiba U., Ambus P., Beier C., Brüggemann N., **Butterbach-Bahl K.**, Dick J., Dorsey J., Duyzer J., Gallagher M., Gasche R., Horvath L., Kitzler B., Leip A., Pihlatie M.K., Rosenkranz P., Seufert G., Vesala T., Westrate H., Zechmeister-Boltenstern S., 2006, Factors controlling regional differences in forest soil emission of nitrogen oxides (NO and N<sub>2</sub>O). Biogeosciences, 3, 615-661.
- Rosenkranz P., Brüggemann N., Papen H., Xu Z., Seufert G., **Butterbach-Bahl K.**, 2006, N<sub>2</sub>O, NO and CH<sub>4</sub> exchange, and microbial N turnover over a Mediterranean pine forest soil. Biogeosciences, 3, 121-133.
- Rosenkranz P., Brüggemann N., Papen H., Xu Z., Horváth L., Butterbach-Bahl K., 2006, Soil N and C trace gas fluxes and microbial soil N turnover in a sessile oak (*Quercus petraea* (Matt.) Liebl.) forest in Hungary. Plant and Soil, 10.1007/s11104-006-9045-z.
- Rothe A., Engelschall M., Hurler R., Wittfoth J., **Butterbach-Bahl K.**, 2000, Nitratverlagerung in tieferen Bodenschichten eines süddeutschen Waldgebietes. Wasser und Boden, 52, 52-56.
- Saiz G., Byrne K., **Butterbach-Bahl K.**, Kiese R., Blujdea V., Farrell E.P., 2006, Stand age related effects on soil respiration in a first rotation Sitka spruce chronosequence in central Ireland. Global Change Biol., 12, 1007-1020, doi:10.1111/j.1365-2486.2006.01145.x.
- Saiz G., Green C., **Butterbach-Bahl K.**, Kiese R., Avirabile V., Farrell E.P., 2006, Seasonal and spatial variability of soil respiration in a Sitka spruce chronosequence.

- Plant and Soil, DOI 10.1007/s11104-006-9052-0.
- Schindlbacher A., Zechmeister-Boltenstern S., **Butterbach-Bahl K.**, 2004, Effects of soil moisture and temperature on NO, NO<sub>2</sub> and N<sub>2</sub>O emissions from European forest soils. *J. Geophysical Research*, 109, D17302, doi:10.1029/2004JD004590.
- Simpson D., **Butterbach-Bahl K.**, Fagerli H., Kesik M., Skiba U., 2006, Deposition and emissions of reactive nitrogen over European forests: A modelling study. *Atmospheric Environm.*, 40, 5712-5726.
- Stange F., **Butterbach-Bahl K.**, Papen H., Zechmeister-Boltenstern S., Li C., Aber J., 2000, A process oriented model of N<sub>2</sub>O and NO emissions from forest soils: 2, Sensitivity analysis and validation. *Journal of Geophysical Research*, 105, 4385-4398.
- Steinkamp R., **Butterbach-Bahl K.**, Papen H., 2000, Methane oxidation by soils of an N-limited and N-fertilized spruce forest in the Black Forest, Germany. *Soil Biology and Biochemistry*, 33, 145-153.
- Sutton M., Reis S., Beier C., **Butterbach-Bahl K.**, Cellier P., Cotrufo M.F., Erisman J.W., Nemitz E., Skiba U., De Vries W., 2006, The nitrogen cycle and its influence on the European greenhouse gas balance. *IGACtivities Newsletter* 34, 11-18.
- Sutton M.A., Nemitz E., Erisman J.W., Beier C., **Butterbach Bahl K.**, Cellier P., de Vries W., Cotrufo F., Skiba U., Di Marco C., Jones S., Laville P., Soussana J.F., Loubet B., Twigg M., Famulari D., Whitehead J., Gallagher M.W., Neftel A., Flechard C.R., Herrmann B., Calanca P.L., Schjoerring J.K., Daemmgen U., Horvath L., Tang Y.S., Emmett B.A., Tietema A., Peñuelas J., Kesik M., Brueggemann N., Pilegaard K., Vesala T., Campbell C.L., Olesen J.E., Dragosits U., Theobald M.R., Levy P., Mobbs D.C., Milne R., Viovy N., Vuichard N., Smith J.U., Smith P., Bergamaschi P., Fowler D., Reis S. 2007. Challenges in quantifying biosphere-atmosphere exchange of nitrogen species. *Environmental Pollution*, 150, 125-139.
- Wassmann R., **Butterbach-Bahl K.**, Dobbermann A., 2007, Irrigated rice production systems and greenhouse gas emissions: crop and residue management trends, climate change impacts and mitigation strategies. *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources* 2007, 2, 4, 1-14, doi: 10.1079/PAVSNNR20072004.
- Werner C., Zheng X., Tang J., Xie B., Kiese R., Liu K., **Butterbach-Bahl K.**, 2006, N<sub>2</sub>O, CH<sub>4</sub> and CO<sub>2</sub> emissions from seasonal tropical rainforests and a rubber plantation in South-West China. *Plant and Soil*, 289, 335-353.
- Werner C., Kiese R., **Butterbach-Bahl K.**, 2007, N<sub>2</sub>O, CH<sub>4</sub> and CO<sub>2</sub> flux measurements from tropical rainforest soils in western Kenya. *J. Geophysical Research-Atmospheres*, 112, D03308, 1-15, doi:10.1029/2006JD007388.
- Werner C., **Butterbach-Bahl K.**, Haas E., Hickler T., Kiese R., 2007, A global inventory of N<sub>2</sub>O emissions from tropical rainforest soils using a detailed biogeochemical model. *Global Biogeochemical Cycles*, 21, GB3010, doi:10.1029/2006GB002909.
- Xu Z., Zheng X., Wang Y., Huang Y., Zhu J., **Butterbach-Bahl K.**, 2004, Effects of elevated CO<sub>2</sub> and N fertilization on CH<sub>4</sub> emissions from paddy rice fields. *Global Biogeochemical Cycles*, 18, GB3009, doi:10.1029/2004GB002233.
- Zheng X., Zhou Z., Wang Y., Zhu J., Wang Y., Yue J., Shi Y.; Kobayashi K., Inubushi K., Huang Y., Han S., Xu Z., Xie B., **Butterbach-Bahl K.**, Yang L., 2006, Nitrogen-regulated effects of free-air CO<sub>2</sub> enrichment (FACE) on methane emission from paddy rice fields. *Global Change Biology* 12, 9, 1717-1732.
- Zheng X., Xie B., Liu C., Zhou Z., Yao Z., Wang Y., Wang Y., Yang L., Zhu J., Huang Y., **Butterbach-Bahl K.**, 2008, Quantifying Net Ecosystem Carbon Dioxide Exchange (NEE) of a Short-Plant Cropland with Intermittent Chamber Measurements. *Global Biogeochem. Cycl.*, in press.

### Publications (others)

- Augustin, S., Makeschin, F., Anders, S., Beck, W., **Butterbach-Bahl, K.**, Fürst, C., Hornschuch, F., Koch, J., Müller, J., Papen, H., Steiner, A.J.K., 2005, Die ökosystemare Kohlenstoffbilanz im Zuge des Waldumbaus - Konsequenzen für den Stoffhaushalt, Mitteilungen der Deutschen Bodenkundlichen Gesellschaft, ISSN: 0343-1071, Germany, 2005, v. 107(1), 215-216.
- Brüggemann N., **Butterbach-Bahl K.**, 2002, Nitrogen oxides emissions from European forest ecosystems. *In:* Van Ham J., Baede A.P.M., Guicherit R., Williams-Jacobse J.G.F.M. (Eds.), Non-CO<sub>2</sub> greenhouse gases: Scientific understanding, control options and policy aspects. Millpress, Rotterdam, The Netherlands, pp. 153-154.
- Brüggemann N., **Butterbach-Bahl K.**, Kiese R., Papen H., 2002, Temperate und tropische Wälder als Quellen und Senken für N<sub>2</sub>O und CH<sub>4</sub>. Tagungsband „Bedeutung der Wechselwirkungen Biosphäre-Atmosphäre für die nachhaltige Nutzung der Biosphäre und den Klimaschutz, 69-73. 16.+17. September 2002, Bundesministerium für Bildung und Forschung, Bonn.
- Butterbach-Bahl K.**, Papen H., 1995, Quantification of N<sub>2</sub>O- and CH<sub>4</sub>-flux rates with high temporal resolution from well aerated soil of a N-supersaturated coniferous forest by a fully automated measuring system: First results. Proceedings of the Second China-EC Joint Workshop on Greenhouse Gases, 91-96, Shenyang.
- Butterbach-Bahl K.**, Rennenberg H., Papen H., 1997, Impact of rice cultivars on CH<sub>4</sub>-emission from rice paddy fields. Proc. Amer. Soc. Limnol. Oceanogr., Aquatic Sciences Meeting, Santa Fe, USA, 10.-14.02.1997, pp. 113-114, 1997.
- Butterbach-Bahl K.**, Willibald G., Papen H., 1998b, A new method for simultaneous measurement of N<sub>2</sub> and N<sub>2</sub>O-emissions from intact soil cores. Proceedings 11<sup>th</sup> International World Fertilizer Congress, September 7-13, 1997, Gent, Belgium, 618-624. FAL Braunschweig.
- Butterbach-Bahl K.**, Von Unold P., 2001, BaPS, ein anwendungsnahes Verfahren zur Bilanzierung von gebietsspezifischen Stickstoffumsetzungsprozessen, Bericht über die 9. Lysimetertagung, Bundesanstalt für Alpenländische Landwirtschaft, 23 - 27, Gumpenstein, Österreich.
- Butterbach-Bahl K.**, Stange F., Gasche R., Papen H., 2001, Measurements and modeling of N-cycling and of gaseous N-emissions ( N<sub>2</sub>O, NO, N<sub>2</sub>) in temperate forest ecosystems. 11<sup>th</sup> Nitrogen Workshop, 9-12 September 2001, Reims, France, Book of Abstracts, 51-52.
- Butterbach-Bahl K.**, Papen H., 2001, Do N<sub>2</sub>O-emissions from N-saturated forest soils partly/ fully compensate for CO<sub>2</sub>-sequestration? EOS Trans. AGU, 82(47).
- Butterbach-Bahl K.**, Papen H., Kesik M., Miehe P., Li C., 2002, Erstellung von Emissionskatastern bodenbürtiger N- und C-Spurgase unter Verwendung mechanistischer Modelle. Tagungsband „Bedeutung der Wechselwirkungen Biosphäre-Atmosphäre für die nachhaltige Nutzung der Biosphäre und den Klimaschutz, 239-245. 16.+17. September 2002, Bundesministerium für Bildung und Forschung, Bonn.
- Butterbach-Bahl, K.**, Englisch, M., Gebetsroither, E., Gerzabek, M., Härtel, E., Herman, F., Hobbie, E., Jandl, R., Katzensteiner, K., Lexer, M., Smidt, S., Spögler, H., Strebl, F., Zechmeister, S., 2003, 2. Zwischenbericht: Modellierung des Stickstoffhaushaltes in einem Waldökosystem in den Nordtiroler Kalkalpen und szenariobasierte Risikobewertung unter veränderlichen Umweltbedingungen. Zwischenbericht; Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft.
- Butterbach-Bahl K.**, Werner C., Kiese R., 2004, Anthropogene N<sub>2</sub>O-Emissionen aus land- und forstwirtschaftlich genutzten Böden. Abschlussbericht zum Umweltbundesamt Forschungsvorhaben FE 200 12 257, 108 pp.
- Butterbach-Bahl K.**, Kiese R., 2005, Stickstoffdynamik und biologische Prozesse in Ökosystemen. Abschlussbericht zum Umweltbundesamt Forschungsvorhaben FuE

- 202 63 224, 123 pp.
- Butterbach-Bahl K.**, 2006, NOFRETETE – Nitrogen oxides emissions from European forest ecosystems. In European Research on Climate Change, 69-72, Office for Official Publications of the European Communities, ISBN 92-79-01713-6.
- Butterbach-Bahl K.**, Werner C., 2005, Upscaling of national N<sub>2</sub>O emissions from soils with biogeochemical models – Germany. A. Leip (ed.) N<sub>2</sub>O emissions from agriculture. Report on the expert meeting “improving the quality for greenhouse gas inventories for N<sub>2</sub>O emissions from agricultural soils”. Joint Research Centre, 21-22.10.2004, 138-144, EU Commission DG Environment. ISBN 92-894-9627-4.
- Butterbach-Bahl K.**, 2005, NITROEUROPE – A project to improve European estimates of N<sub>2</sub>O emissions. A. Leip (ed.) N<sub>2</sub>O emissions from agriculture. Report on the expert meeting “improving the quality for greenhouse gas inventories for N<sub>2</sub>O emissions from agricultural soils”. Joint Research Centre, 21-22.10.2004, 62-68, EU Commission DG Environment. ISBN 92-894-9627-4.
- Butterbach-Bahl, K.**, 2005, Final report. Nitrogen oxides emissions from European forest ecosystems (NOFRETETE), EVK2-CT-2001-00106 to the European Commission DG Research.
- Göttlein, A., Baumgarten, M., Huber, C., Weis, W., Papen, H., **Butterbach-Bahl, K.**, Gasche, R., 2003, Femel- und Kahlhieb im Vergleich. LWFaktuell Nr. 41, Seite 6-8.
- Kesik M., Blagodatsky S., Papen H., **Butterbach-Bahl K.**, 2004, Dynamics of N<sub>2</sub>O and NO production by *Alcaligenes faecalis parafaecalis*: effect of pH, temperature, substrate and oxygen supply. “Controlling nitrogen flows and losses” (D.J. Hatch, D.R. Chadwick, S.C. Jarvis, J.A. Roker, eds.), page 326-328, Proceedings of the 12<sup>th</sup> Nitrogen Workshop, 21<sup>st</sup>-24<sup>th</sup> September 2003, Exeter, UK. Wageningen Academic Publishers, Wageningen, The Netherlands, 2004. ISBN 9076998434
- Kiese R., **Butterbach-Bahl K.**, 2006, Biosphäre-Atmosphäre-Austausch klimarelevanter Spurengase (N<sub>2</sub>O, CH<sub>4</sub>, CO<sub>2</sub>) in agrarisch und forstlich genutzten Ökosystemen. Emissionen der Tierhaltung, KTBL-Tagung vom 5-7 Dezember 2006, 37-48, ISBN 978-3-939371-19-9,
- Kiese R., Breuer L., Papen H., **Butterbach-Bahl K.**, 2001, Rates of N-transformation and N<sub>2</sub>O-emission in tropical rain forest soils. 11<sup>th</sup> Nitrogen Workshop, 9-12 September 2001, Reims, France, Book of Abstracts, 123-124.
- Lampe C., Dittert K., Sattelmacher B., Wachendorf M., **Butterbach-Bahl K.**, Papen H., Gasche R., and Taube F., 2003, Einfluss der N-Düngung auf die N<sub>2</sub>O-Emissionen auf Grünland. 5.DLG-Grünlandtagung 2003 Die 10.000 kg-Herde auf dem Grünland Nährstoffe optimal nutzen 36-42.
- Papen H., Hermann H., **Butterbach-Bahl K.**, Rennenberg H., 1994, Emissionen von N<sub>2</sub>O, NO und NO<sub>2</sub> aus Böden zweier Fichtenstandorte im Schwarzwald. Kernforschungszentrum Karlsruhe, KfK-PEF, 127.
- Stange F., **Butterbach-Bahl K.**, Papen H., Li C., 1999, Entwicklung und Anwendung des prozeßorientierten Modells PnET-N-DNDC zur flächenhaften Erfassung von N-Spuren gasflüssen aus Waldböden. In: Hildebrand E.E. (Hrsg.), Vom Punkt zur Fläche- Neue Wege. Berichte Freiburger Forstliche Forschung, 7, 179-182.
- Stange F., Papen H., **Butterbach-Bahl K.**, 2001, Entwicklung und Anwendung eines prozeßorientierten Modells zur Beschreibung der N-Gasemissionen aus Böden temperater Wälder, Deutsche Bodenkundlichen Mitteilungen, 96, 292-294, 2001.
- Sutton, M.A., Nemitz, E., Skiba, U., Theobald, M.R., Dragosits, U., Fowler, D., Erisman, J.W., Hensen, A., Bleeker, A., Cellier, P., Loubet, B., Schjoerring, J.K., Neftel, A., Flechard, C., Horvath, L., Gallagher, M., Daemmgen, U., Pilegaard, K., Duyzer, J., Simpson, D., Brüggemann, N., **Butterbach-Bahl, K.** 2005, Land-atmosphere exchange of reactive species of nitrogen in Europe. In: The Changing Chemical Climate of the Atmosphere, First ACCENT Symposium, Urbino, Sep 12-16, 2005, Programme and Abstracts, p. 97.
- Sutton M.A., Nemitz E., Erisman J.W., Beier C., **Butterbach Bahl K.**, Cellier P., de Vries W., Cotrufo F., Skiba U., Hensen A., Bleeker A., Laville P., Loubet B., Soussana



- J.F., Twigg M., Famulari D., Whitehead J., Gallagher M.W., Calanca P.L., Tang Y.S., Campbell C., Olesen J.E., Dragosits U., Theobald M.R., Viovy N., Vuichard N., Smith J.U., Smith P.E., Levy P., Mobbs D., Milne R. and Fowler D. 2006, Land atmosphere exchange of nitrogen species. In: The changing chemical climate of the atmosphere. S. Fuzzi and M. Maione (eds.) Proceedings of the first ACCENT Symposium, Urbino, Sept 12-16 2005, pp94-101 MMVI ARACNE editrice S.r.l., Rome, ISBN 88-548-0851-2.
- Wassmann, R., **Butterbach-Bahl, K.**, 2004, Quantifizierung der boden-bürtigen Emissionen von CH<sub>4</sub> und N<sub>2</sub>O in Verbindung mit Simulationsmodellen, Mitteilungen der Deutschen Bodenkundlichen Gesellschaft, 103, 43-44.
- Werner C., L. C., Papen H., **Butterbach-Bahl K.**, 2004, Soils as sources of N-trace gases in Germany. Proceedings of the International Conference „Greenhouse Gas Emissions from Agriculture – Mitigation Options and Strategies“, February 10-12. 2004, Leipzig, Germany, page 18-24.
- Werner C., Kesik M., Papen H., Li C., **Butterbach-Bahl K.**, 2004, Soils as sources of N-trace gases in Germany – results from calculations with biogeochemical models. “Controlling nitrogen flows and losses” (D.J. Hatch, D.R. Chadwick, S.C. Jarvis, J.A. Roker, eds.), page 372-374, Proceedings of the 12<sup>th</sup> Nitrogen Workshop, 21<sup>st</sup>-24<sup>th</sup> September 2003, Exeter, UK. Wageningen Academic Publishers, Wageningen, The Netherlands, 2004. ISBN 9076998434