

Publication List

Status: March 2009

Journal papers: (16 papers, h-index: 7^(Scopus))

1. **Koetz, B.**, Kleeschulte, S., Höft, R., & Fernandes, D., (2009 (submitted)). "Towards global trends in ecosystem extent: A global indicator of land degradation in dry and sub-humid areas," *Global Ecology and Biogeography*.
2. **Koetz, B.**, Morsdorf, F., van der Linden, S., Curt, T., & Allgöwer, B. (2008). Multi-source Land Cover Classification for Forest Fire Management based on Imaging Spectrometry and LiDAR Data. *Forest Ecology and Management*, 256, (3), 263-271.
3. Kneubühler, M., **Koetz, B.**, Huber, S., Zimmermann, N., & Schaepman, M., (2008). "Space-based spectro-directional Measurements for the Improved Estimation of Ecosystem Variables," *Canadian Journal of Remote Sensing*, 34, (3), 192-205.
4. Verrelst, J., Schaepman, M., **Koetz, B.**, & Kneubühler, M. (2008). Directional Sensitivity Analysis of Vegetation Indices from Multi-Angular CHRIS-Proba Data. *Remote Sensing of Environment*, 112, (5), 2341-2353.
5. Dell'Endice, F., Nieke, J., **Koetz, B.**, Schaepman, M., & Itten, K., (2008 (in review)). "Spectral Binning Pattern Selection for Imaging Spectrometers," *ISPRS Journal of Photogrammetry and Remote Sensing*.
6. Huber, S., Kneubühler, M., **Koetz, B.**, Schopfer, J.T., Itten, K., & Zimmermann, N.E. (2008 (in review)). Contribution of Directional CHRIS/Proba Data for Estimating Canopy Biochemistry in Forest. *Journal of Applied Remote Sensing*
7. **Koetz, B.**, Sun, G., Morsdorf, F., Ranson, K.J., Kneubühler, M., Itten, K., & Allgöwer, B. (2007). Fusion of imaging spectrometer and LIDAR data over combined radiative transfer models for forest canopy characterization. *Remote Sensing of Environment*, 106, 449.
8. Danson, M., Hetherington, D., Morsdorf, F., **Koetz, B.**, & Allgöwer, B. (2007). Forest Canopy Gap Fraction from Terrestrial Laser Scanning. *IEEE Geosciences and Remote Sensing Letters*, 4, 157-160
9. **Koetz, B.**, Morsdorf, F., Sun, G., Ranson, K.J., Itten, K., & Allgöwer, B. (2006). Inversion of a LIDAR Waveform Model for Forest biophysical Parameter Estimation. *IEEE Geosciences and Remote Sensing Letters*, 3, 49-53
10. Morsdorf, F., **Kötz, B.**, Meier, E., Itten, K.I., & Allgöwer, B. (2006). Estimation of LAI and fractional cover from small footprint airborne laser scanning data based on gap fraction. *Remote Sensing of Environment*, 104, 50-61
11. **Koetz, B.**, Baret, F., Poilve, H., & Hill, J. (2005). Use of coupled canopy structure dynamic and radiative transfer models to estimate biophysical canopy characteristics. *Remote Sensing of Environment*, 95, 115-124
12. Schaepman, M., **Koetz, B.**, Schaepman-Strub, G., & Itten, K. (2005). Spectrodirectional remote sensing for the improved estimation of biophysical and –chemical variables: two case studies. *J. Applied Earth Observation and Geoinformation*, 271-282

13. **Kötz, B.**, Schaepman, M., Morsdorf, F., Bowyer, P., Itten, K., & Allgower, B. (2004). Radiative transfer modeling within a heterogeneous canopy for estimation of forest fire fuel properties. *Remote Sensing of Environment*, 92, 332-344
14. Morsdorf, F., Meier, E., **Kötz, B.**, Itten, K., Dobbertin, M., & Allgöwer, B. (2004). LIDAR based geometric reconstruction of boreal type forest stands at single tree level for forest and wildland fire management. *Remote Sensing of Environment*, 92, 353-362
15. Schaepman, M., **Koetz, B.**, Schaepman-Strub, G., Zimmermann, N., & Itten, K. (2004). Quantitative retrieval of biogeophysical characteristics using imaging spectroscopy: a mountain forest case study. *J. Comm. Ecol.*, 5, 93-104
16. Jarmer, T., **Kötz, B.**, & Atzberger, C. (2003). Spektroradiometrische Ableitung biophysikalischer Vegetationsparameter von Weizenbeständen: Vergleichende Untersuchung verschiedener empirisch-statistischer Verfahren. *Photogrammetrie Fernerkundung Geoinformation*, 1, 43-50

Book chapters and theses:

- Danson, F.M., Morsdorf, F., & **Koetz, B.** (2009 (in press)). Airborne and ground-based laser scanning for measuring vegetation canopy structure. *Laser Scanning for the Environmental Sciences*
- Waske, B., Chi, M., Benediktsson, J. A., van der Linden, S., & **Koetz, B.** (2008 (in review)), "Algorithms and applications for land cover classifications - a review," in *Geospatial Technology for Earth Observation*: Springer.
- Zimmermann, N.E., Washington-Allen, R.A., Ramsey, R.D., Schaepman, M.E., Mathys, L., **Koetz, B.**, Kneubühler, M., & Edwards, T.C. (2007). Modern remote sensing for environmental monitoring of landscape states and trajectories. In F. Kienast, O. Wildi & S. Ghosh (Eds.), *A Changing World, Challenges for Landscape Research* (p. 296): Springer
- Dissertation: **Koetz, B.** (2006): Estimating Biophysical and Biochemical Properties over Heterogeneous Vegetation Canopies - Radiative Transfer Modeling in Forest Canopies Based on Imaging Spectrometry and LIDAR, University of Zürich - Switzerland, Faculty of Science
- Master thesis: **Koetz, B.** (2001): Use of coupled evolution and radiative transfer models to derive biophysical canopy characteristics from multispectral/temporal remote sensing data, University of Trier – Germany, Department of Geoscience

Conference contributions: (41 papers)

1. Koetz, B., Itten, K., Borgeaud, M., Brunner, D., Buchmann, B., Feigenwinter, C., Hüsler, F., Kneubühler, M., Parlow, E., Psomas, A., Wunderle, S., & Zimmermann, N. (2009). HYPER-SWISS-NET: Fostering the Swiss Research Community in the Field of Imaging Spectroscopy. In, *EARSel Imaging Spectrometry Workshop*. Tel Aviv, Israel
2. Paganini, M., Koetz, B., Fernandez-Pietro, D., Kleeschulte, S., Mumby, P.J., Gaspar, P., & Pettersson, L. (2009). Monitoring Biodiversity from Space: The ESA DIVERSITY Project. In, *IEEE International Geoscience and Remote Sensing Symposium (IGARSS'09)*. Capetown, South Africa
3. Sun, G., Rubio, J., Ranson, K.J., Kimes, D., Koetz, B., & Gastellu-Etchegorry, J. (2009). Fusion of Multi-sensor Data for Forest Structural Parameter Retrieval

- Using 3D Radiative Transfer Modeling. In, IEEE International Geoscience and Remote Sensing Symposium (IGARSS'09). Capetown, South Africa
4. Koetz, B., Arino, O., Poulianen, J., & Bojkov, B. (2008). GlobSnow - a new contribution to global snow monitoring services. In P. Regner (Ed.), MERIS and (A)ATSR workshop. Frascati, Italy
 5. Koetz, B., & Arino, O. (2008). Earth Observation from Space supporting Biodiversity Conservation. In, DIVERSITY final user workshop. Tegucigalpa, Honduras
 6. Arino, O., & Koetz, B. (2008). European Space Agency supporting the Rio (UNCBD, UNCCD, UNFCCC), World Heritage and Ramsar conventions. In, Side event at the UNCBD 9th Conference of Parties. Bonn, Germany
 7. Arino, O., & Koetz, B. (2008). Introduction to Data User Element program at ESA and outline of a possible GlobSnow project. In, GlobSnow user consultation workshop. Bern, Switzerland: European Space Agency: <http://dup.esrin.esa.int/news/news152.asp>
 8. European Space Agency (2008). Earth Observation from Space supporting Biodiversity Conservation. In B. Koetz (Ed.), Brochure of the DUE project DIVERSITY. ESA-ESRIN, Frascati
 9. European Space Agency (2008). Earth observation highlighted at UN biological diversity conference. In, News on ESA web portal: http://www.esa.int/esaEO/SEMZLNNKRGF_index_0.html
 10. Koetz, B., Kneubühler, M., Huber, S., Schopfer, J., & Baret, F. (2007). LAI Estimation Based on Multi-Temporal CHRIS/PROBA Data and Radiative Transfer Modelling. In, Envisat Symposium. Montreux, Switzerland
 11. Koetz, B., Morsdorf, F., Curt, T., van der Linden, S., Borgniet, L., Odermatt, D., Alleaume, S., Lampin, C., Jappiot, M., & Allgöwer, B. (2007). Fusion of Imaging Spectrometer and LIDAR data using Support Vector Machines for Land Cover Classification in the Context of Forest Fire Management. In, The 10th International Symposium on Physical Measurements and Signatures in Remote Sensing (ISPMSRS). Davos, Switzerland
 12. Koetz, B., Kneubühler, M., Huber, S., Schopfer, J., & Baret, F. (2007). Radiative Transfer Model Inversion Based on Multi-Temporal CHRIS/PROBA Data for LAI Estimation. In, 10th ISMPSRS'07. Davos, Switzerland
 13. Morsdorf, F., Frei, O., Koetz, B., & Meier, E. (2007). Modeling of small footprint airborne laser scanning returns using ray-tracing and L-systems. In, ISPMSRS'07. Davos, Switzerland
 14. Huber, S., Kneubühler, M., Koetz, B., Schopfer, J., Zimmermann, N., & Itten, K. (2007). The Potential of Spectrodirectional CHRIS/Proba Data for Biochemistry Estimation. In, Envisat Symposium. Montreux, Switzerland
 15. Huber, S., Kneubühler, M., Koetz, B., Schopfer, J., Zimmermann, N., & Itten, K. (2007). Estimating Nitrogen Concentration from Directional CHRIS/Proba Data. In, 10th ISMPSRS'07. Davos, Switzerland
 16. Nieke, J., Dell'Endice, F., Hüni, A., Kneubühler, M., Schlaepfer, D., Koetz, B., Schopfer, J., Itten, K., & Plaza, A. (2007). Calibration and Validation Activities in the Scope of HYPER-I-NET: The RSL Approach. In, IEEE International Geoscience and Remote Sensing Symposium (IGARSS'07). Barcelona, Spain
 17. Schopfer, J., Huber, S., Odermatt, D., Schneider, T., Dorigo, W., Oppelt, N., Koetz, B., Kneubühler, M., & Itten, K. (2007). Towards a Comparison of Spaceborne and Ground-Based Spectrodirectional Reflectance Data. In, Envisat symposium. Montreux, Switzerland

18. Schlerf, M., Hill, J., Koetz, B., & Kneubühler, M. (2007). Retrieving canopy structure from hyperspectral multi-angular satellite data. In, 5th EARSeL on Imaging Spectroscopy. Bruges, Belgium
19. Sun, G., Ranson, K.J., Liu, D., & Koetz, B. (2007). Simulation Studies of Forest Structure Using 3D Lidar and Radar Models. In, IEEE International Geoscience and Remote Sensing Symposium (IGARSS'07). Barcelona, Spain
20. Sun, G., Liu, D., Ranson, K.J., & Koetz, B. (2007). Simulation studies of the effect of forest spatial structure on InSAR signature. In, ISPMRS'07. Davos, Switzerland
21. Verrelst, J., Zurita-Milla, R., Koetz, B., & Schaepman, M. (2007). Angular Unmixing of Photosynthetic and Non-Photosynthetic Vegetation within a Coniferous Forest Using CHRIS-PROBA. In, ISPMRS'07. Davos, Switzerland
22. Koetz, B., Sun, G., Morsdorf, F., Ranson, K.J., Kneubühler, M., Itten, K., & Allgöwer, B. (2006). Inversion of combined Radiative Transfer Models for Imaging Spectrometer and LIDAR Data. In, IEEE IGARSS 2006. Student paper competition finalist, Denver, USA
23. Verrelst, J., Schaepman, M., Koetz, B., & Kneubühler, M. (2006). Assessing the Angular Variability of Broadband and Narrowband Vegetation Indices Using CHRIS/Proba Data. In, 4th international Workshop of Multiangular Measurements and Models. Sydney, Australia
24. Koetz, B., Kneubühler, M., Widlowski, J.L., Morsdorf, F., Schaepman, M., & Itten, K. (2005). Assessment of canopy structure and heterogeneity from multi-angular CHRIS-PROBA data. In, The 9th International Symposium on Physical Measurements and Signatures in Remote Sensing (ISPMRS) (pp. 73-78). Beijing, China
25. Koetz, B., Kneubühler, M., Schopfer, J., Schaepman, M., & Itten, K. (2005). Influence of changing background on CHRIS/Proba data over an heterogeneous canopy. In, 4th EARSeL Workshop on Imaging Spectroscopy. Warsaw, Poland
26. Koetz, B., Morsdorf, F., Kneubühler, M., Itten, K., & Allgöwer, B. (2005). Concept for forest parameter estimation based on combined Imaging Spectrometer and LIDAR data. In, 4th EARSeL Workshop on Imaging Spectroscopy. Warsaw, Poland
27. Kneubühler, M., Koetz, B., Richter, R., Schaepman, M.E., & Itten, K. (2005). Geometric and Radiometric Pre-processing of CHRIS/Proba over Mountainous Terrain. In, 3rd CHRIS/Proba workshop. Frascati, Italy: ESA
28. Morsdorf, F., Koetz, B., Itten, K., Isenegger, D., & Allgöwer, B. (2005). Sensitivity of a Forest Fire Behavior Model to High Resolution Remote Sensing Data. In, EARSeL 5th International workshop on Remote Sensing and GIS Applications to Forest Fire Management: Fire Effects Assessment. Zaragoza, Spain
29. Beusch, M., Koetz, B., Kneubühler, M., & Itten, K. (2005). Forest Canopy Structure derived from spatial and spectral high resolution remote sensing data. In, 4th EARSeL Workshop on Imaging Spectroscopy. Warsaw, Poland
30. Koetz, B., Morsdorf, F., Kneubühler, M., Schaepman, M., Meier, E., Itten, K., & Allgöwer, B. (2004). Combination of imaging spectrometer data and high resolution LIDAR data by 3-D radiative transfer modeling. In R.O. Green (Ed.), AVIRIS workshop (p. 6). Pasadena, CA, USA

31. Koetz, B., Morsdorf, F., Schaepman, M., Meier, E., Itten, K., & Allgöwer, B. (2003). Specific Parameterization of a Boeral Forest for a 3-D Radiative Transfer Modelling Approach based on Imaging Spectrometer Data and High Resolution LIDAR Data. In M. Rast (Ed.), Second SPECTRA Workshop. Noordwijk: ESA/ESTEC
32. Kötz, B., Schaepman, M., Morsdorf, F., Bowyer, P., Itten, K., & Allgöwer, B. (2003). Scaling-up based on Radiative Transfer Modeling in a Pine (*Pinus Montana* ssp. *arborea*) dominated Canopy for Forest Fire Fuel Properties Mapping using Imaging Spectrometer Data. In, EARSEL - 4th International Workshop: Remote Sensing and GIS applications for Forest Fire Management (p. 3). Ghent
33. Kötz, B., Schaepman, M., Morsdorf, F., Bowyer, P., Itten, K., & Allgöwer, B. (2003). Multi-resolution Imaging Spectroscopy Resolving the Structure of Heterogeneous Canopies for Forest Fire Fuel Properties Mapping. In, IGARSS 2003. Toulouse
34. Atzberger, C., Schlerf, M., Jarmer, T., & Kötz, B. (2003). Retrieval of Wheat Canopy Attributes from Hyperspectral HyMap Data and Physically Based Canopy Reflectance Models. In, 3rd EARSEL Workshop on Imaging Spectroscopy. Oberpfaffenhofen
35. Atzberger, C., Jarmer, T., Koetz, B., & Schlerf, M. (2003). Spectroradiometric determination of wheat canopies biophysical variables. Comparison of several empirical-statistical methods. In, EARSEL - 23rd annual Symposium. Ghent
36. Morsdorf, F., Meier, E., Koetz, B., Itten, K., & Allgöwer, B. (2003). High Resolution Airborne Laser Scanning for Forest Fuel Type Mapping. In, EARSEL - 4th International Workshop: Remote Sensing and GIS applications for Forest Fire Management
37. Schaepman, M., Kneubühler, M., Koetz, B., Schlaepfer, D., Morsdorf, F., Meier, E., Allgöwer, B., & Itten, K. (2003). Validation and calibration of ENVISAT/MERIS Level 1 and 2 products over land. In, EARSEL - 23rd annual Symposium. Ghent
38. Schaepman, M., Koetz, B., Schaepman-Strub, G., & Itten, K. (2003). Imaging Spectroscopy as a Quantitative Tool for the Retrieval of Biogeophysical and -chemical Parameters. In, State of the Art in Vegetation Monitoring Approaches. Zürich
39. Schläpfer, D., Koetz, B., & Gruber, S. (2003). The influence of DEM characteristics on preprocessing of DAIS/ROSIS data in high altitude alpine terrain. In, 3rd EARSEL Workshop on Imaging Spectroscopy. Oberpfaffenhofen
40. Marloie, O., Kötz, B., Bruguier, N., & Baret, F. (2001). Influence of the wind on canopy reflectance. The case of maize and wheat crops. In, ISPRS Symposium on Physical Measurements & Signatures in Remote Sensing. Aussois
41. Schaepman, M., Dangel, S., Kneubühler, M., Schlaepfer, D., Bojinski, S., Brazile, J., Kötz, B., Strub, G., Kohler, R., Popp, C., Schopfer, J., & Itten, K. (2002). Quantitative field spectroscopic measurement instrumentation and techniques. In, 1st EPFS Workshop on Field Spectrometry. NERC, Southampton, UK