Marcel Buchhorn

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HIGHLIGHTS OF QUALIFICATIONS

- 10+ years of experience in hyperspectral and spectro-directional remote sensing and GIS
- Solid background in earth science and forestry
- Interdisciplinary thinking and troubleshooting
- Development and patenting of a field spectro-goniometer for ground-based hyperspectral and spectro-directional reflectance characterization of natural surfaces
- Proficient in MS Office, Visual Basic, Python, ArcGIS, MATLAB, and ENVI
- Multilingual: German (native language), fluent in English, basics in French

SKILLS AND EXPERIENCE

Remote Sensing

- Application of imaging spectroscopy for the quantitative and qualitative characterization, mapping, and multi-temporal analyses of surface materials
- Hyperspectral algorithm development for Arctic biomes in preparation of the EnMAP satellite mission
- Development and patenting of a field spectro-goniometer for multi-directional research
- Investigation of the influence of BRDF-effects on remote sensing products
- Realization of field campaigns for the radio-spectrometric and spectro-goniometric reflectance characterization of plant communities along environmental gradients
- Development of methods for the satellite-based estimation of biomass potentials (forestal and agricultural residual materials) for energy-related usage

GIS

- Development of classification and mapping approaches for hyperspectral datasets
- Big data and spatio-temporal analyses
- Creation of digital terrain models
- Data base management

Additional

- Strong background in IT (programming, modelling, graphic design)
- Mechanical skills

EMPLOYMENT HISTORY

Scientific Associate / Ph.D. candidate **2010 – 2014**
Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research,
Potsdam, Germany

Project Manager / Scientific Associate **2008 – 2010**
German Biomass Research Center (DBFZ), Leipzig, Germany

Student Assistant **2005 – 2007**
Canon Germany, Munich, Germany

EDUCATION HISTORY

Doctoral Studies in Geoscientific Remote Sensing (Ph.D. graduation) **2014**
University of Potsdam, Germany

Title of Doctoral Thesis: "Ground-Based Hyperspectral and Spectro-Directional Reflectance Characterization of Arctic Tundra Vegetation Communities – Field Spectroscopy and Field Spectro-Goniometry of Siberian and Alaskan Tundra in Preparation of the EnMAP Satellite Mission"

M.Sc. Degree in Sustainable Resource Management **2008**
Technische Universität München (TUM), Germany

Title of Master's Thesis: "The anisotropy approach / extra information for automatic image classification – Synergistic use of spectral and angular signatures of CHRIS/Proba hyperspectral images in a temporal context"

Diplom-Ingenieur (FH) degree in Forestry **2005**
University of Applied Sciences in Eberswalde, Germany
(Equivalent to a M.Sc. Degree in Forestry)

Title of Thesis: "Development of a controlling system for medium-sized forest enterprises – A forestry specific controlling system based on management ratios for the strategic and operative business administration"

PATENTS

Portable GonioSpectrometer with Constant Observation Centre. National and International Patent Application DE 10 2011 117 713.A1 (WO/2013/013652 (A1)).
National Filing Date: 25.10.2011, International Filing Date: 27.06.2012, Publication Date: 31.01.2013; Applicants: Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI), Inventors: Marcel Buchhorn, Reinhold Petereit.

AWARDS AND GRANTS

POLMAR Outgoing Scholarship **2012**
Grant for a research stay at the University of Alaska Fairbanks, USA

Grant 50 EE 1013, German Aerospace Center (DLR) **2010 – 2013**
Project: hyperspectral method development for ARCtic VEGetation biomes (hy-ARC-VEG)
Purpose: preparation for the EnMAP satellite mission

E.ON Future Award 2008 **2008**
Award for the best Master's Thesis at the Technische Universität München (TUM)

Sparkasse Barnim Award 2005 **2005**
Award for the best Diploma Thesis at the University of Applied Sciences in Eberswalde

References Available Upon Request