

## PERSONAL INFORMATION

### Dr. Markus Drapalik



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ResearchGate: <https://www.researchgate.net/profile/Markus-Drapalik>

## YEARS OF EXPERIENCE

14

### PRESENT POSITION

Senior Scientist, Institute of Safety/Security and Risk Sciences, Department of Water - Atmosphere – Environment, University of Natural Resources and Life Sciences, Vienna

### PROFILE

Markus is researcher at the Institute of Safety/Security and Risk Sciences at University of Natural Resources and Life Sciences, Vienna. His main research areas encompass technology assessment of energy technologies, physical modelling and technological risk assessment.

He works on quantifying risks from wind turbines using spatial risk models and applying technology assessment approaches to shape technologies towards sustainability and risk reduction. His main research goal is establishing a methodology for comprehensive, integrative analysis of present and future technologies.

## WORK EXPERIENCE

2018 – Present

**Senior Scientist – Institute of Safety/Security and Risk Sciences**

Department of Water-Atmosphere-Environment  
University of Life Sciences

2009 – 2017

**Junior Scientist – Institute of Safety/Security and Risk Sciences**

Department of Water-Atmosphere-Environment  
University of Life Sciences

## REFERENCES (EXCERPT)

2013 – Present

**Ice Risk Assessments for Wind Parks**

#### Description

Use ballistic models for spatial risk assessment

#### Responsibilities in project

Leader / Principal Researcher

Alignment with all relevant internal and external stakeholders

#### Project role

Project Leader

2024-2025

**Nominee for the working group for the revision of the standard ÖNORM S 5207 - Radiation protection training for intervention personnel**

2024

**Assistance in Review of Application to Construct BWRX-300 Reactor(s) at Darlington**

#### Description

Review of Chapters 11 (Management of Radioactive Waste) and 15 (Safety Analysis) of the preliminary safety report for the BWRX-300 reactor

#### Responsibilities in project

Review of Chapter 15

Assessment and comparison of safety systems

#### Project role

Researcher

**2024 Expert opinion on the long-term operation of the French 1300 MW fleet**

Description

Comparison of safety systems and safety-relevant systems of the French P4/P'4 (1300 MW fleet) against the EPR as part of a public consultation process for the planned life time extension.

Responsibilities in project

Assessment and comparison of safety systems

Project role

Researcher

**2017 – 2018 Energy Future 2050 - Technical options put to the test**

Description

Application of Prospective Technology Assessment to Technical Options for reaching CO2 neutrality in Austria

Responsibilities in project

Validation of Energy Scenarios

Technology Assessment of selected renewable energy conversion systems

Project role

Researcher

**2019 – 2021 Thematic Conference on Novel Materials and Materials: Reviewing the Need for Action on Chemical Safety**

Description

Identify and define advanced materials to review the need for adaptations in legal framework

Responsibilities in project

Information collection and assessment of advanced materials

Integration of data from discussions in conferences and surveys

Project role

Researcher

**2014 – 2018 Development of assessment methods for the use of small wind turbines in urban environments**

Description

Development of physical and probabilistic models for single and combined use in risk assessment for urban small wind turbines

Responsibilities in project

Development of physical and probabilistic models

Model verification and validation

Thesis supervisor

Field Research

Project role

Work Package Leader, BOKU project coordinator

**2012 - 2016 Energy Budget Upper Austria 1918-1938**

Description

Reconstruct the energy budget of Upper Austria in the interwar period from historical data, with a focus on the beginning electrification of Austria

Responsibilities in project

Match and balance energy flows

Reconstruct production data from various sources

Project role

Project Assistant

**2012 – 2014    Research activities regarding historical radiological contaminated sites in Austria**

Description

Identify and assess historical radiologically contaminated sites in Austria

Responsibilities in project

Data acquisition and verification

Project role

Project Assistant, later Leader

**2012 – 2016    Monitoring of Ice Shed from Wind Turbines**

Description

Monitoring of Ice Shed as Database for Advanced Physical Models

Responsibilities in project

Project Management

Research Planning

Field Research

Project role

Project Leader

**2011 – 2013    FOCUS - Foresight Security Scenarios: Mapping Research to a Comprehensive Approach to Exogenous EU Roles**

Description

EU Security Foresight with focus on impact of Natural Disasters and Climate Change

Responsibilities in project

Leader of Sub-Task Natural Disasters

Project role

BOKU coordinator

**2010 - 2011    Agrarian Land-Use Optimization for Energy Production in Europe**

Description

Assessment of Agrarian Production Potential using optimised cascadic land use management

Responsibilities in Project

Data collection and aggregation

Modelling

Scenario Building

Project Role

Project Assistant

**EDUCATION AND TRAINING**

2010-2017

**PhD in Risk Assessment**

University of Natural Resources and Life Sciences, Vienna, Austria

2003-2010

**Mag. rer. nat, Physics**

Physics

University of Vienna, Austria

## TEACHING EXPERIENCE

### University of Natural Resources and Life Sciences, Vienna, Austria

2023-Present	Zukünftige Energieversorgung in Abhängigkeit der Ressourcenverfügbarkeit (Future energy supply in dependence of resource availability)
2012-Present	Praxisseminar Strahlenschutz (Practical Seminar Radiation Protection)
2015-Present	Technikfolgenabschätzung (Technology Assessment)
SS 2019/20, SS 2020/21, SS 2021/22, WS 2021/22, WS 2022/23	Technology assessment and risk management for wind turbines (in Eng.)
SS 2018/19	Windenergie – Risiken und Gestaltungsmöglichkeiten (Wind Energy – Risks and Shaping Options)
WS 2018/19	Projektseminar Energiewende (Project Seminar Energy Transition)

## SUPERVISED MASTER THESES

### University of Natural Resources and Life Sciences, Vienna, Austria

- Dominik Wild (2024): Saisonale Stromspeicher als zeitliche Flexibilisierungsoption von Energieüberschüssen aus erneuerbaren Energieträgern in Österreich im Jahr 2050. Master / Diploma Thesis - Institute of Safety/Security and Risk Research
- Felix Bauer (2024): Konzeptionierung und Simulation einer solargetriebenen thermohydraulischen Wasserpumpe in einer Low-Tech Bauweise mit RELAP5/MOD 3.3. Master / Diploma Thesis - Institute of Safety/Security and Risk Research
- Theresa Raymond (2023): Potential location analysis for small wind turbines in the federal states Burgenland and Lower Austria in Austria with consideration of topological, technical, and legal restrictions. Master / Diploma Thesis - Institute of Safety/Security and Risk Research
- Christoph Vogg (2023): Auswirkungen erhöhter Sonnenenergienutzung am Beispiel Wien. Master / Diploma Thesis - Institute of Safety/Security and Risk Research
- Daniel Böhm (2022): Die seltsame Beziehung zwischen Photovoltaik und Solarthermie in der DACH-Region. Master / Diploma Thesis - Institute of Safety/Security and Risk Research
- Steven Plattner (2022): Anwendungspotentiale von mittelgroßen Windkraftanlagen in Europa. Master / Diploma Thesis - Institute of Safety/Security and Risk Research
- Jakob Völker (2021): Sekundäre Ströme kritischer Rohstoffe in Österreich - mit Fokus auf Erneuerbare Energien. Master / Diploma Thesis - Institute of Safety/Security and Risk Research
- Viktor Vavrik (2019): Auswirkungen von Schwachwindanlagen und Stromspeichern auf die Stromerzeugung ausgewählter Windkraftstandorte im Burgenland und in Niederösterreich. Master / Diploma Thesis - Institute of Safety/Security and Risk Research
- Daniela Einsiedler (2017): End of Life Wege von Windkraftanlagen in Österreich: Herausforderungen und Chancen beim Recycling. Master / Diploma Thesis - Institute of Safety/Security and Risk Research
- Larissa Jana Zajicek (2017): Probabilistic Safety Analysis for Small Wind Turbines. Master / Diploma Thesis - Institute of Safety/Security and Risk Research

Sebastian Purker (2022): Optimierung der Simulationsumgebungen für Fluidsimulation am Beispiel von Eisfall von Windkraftanlagen.  
Master / Diploma Thesis - Institute of Safety/Security and Risk Research

## DIDACTIC COMPETENCES

- 2024 Betreuung und Bewertung studentischer Abschlussarbeiten (8 hours)  
BOKU Training Programme
- 2024 Classroom Assessment Techniques - wer hat was wie verstanden?  
BOKU Training Programme
- 2024 Schafft die KI die Hochschullehre ab? ChatGPT und Co und deren Auswirkungen auf die Hochschullehr  
BOKU Training Programme
- 2023 Betreuung von Masterarbeiten und Dissertationen (4 hours)  
BOKU Training Programme
- 2022 Grundlagen des Lehrens und Lernens an Hochschulen (16 hours)  
BOKU Training Programme

## PERSONAL SKILLS

Mother tongue(s) German

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
French	B1	B2	A2	A2	A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
[Common European Framework of Reference for Languages](#)

Communication skills Good communication skills through experience as lecturer and speaker

Organisational / managerial skills Leadership, leader of multiple research projects  
Thesis Adviser

Job-related skills Speaker at multiple conferences  
<https://www.linkedin.com/in/markus-drapalik/>  
<https://www.researchgate.net/profile/Markus-Drapalik>

Computer skills Excellent programming skills in Matlab  
Basic programming skills in RELAP  
Excellent Skills in MS Office