

## Anställning

### Biträdande koordinator

MECW: The Middle East in the Contemporary World  
Lunds universitet  
Lund, Sverige  
2009 feb. 1 → present

### Profilområdesmedlem

LTH profilområde: Vatten  
Lunds universitet  
Sverige  
1982 juli 1 → present

### Professor

Avdelningen för Teknisk vattenresurslära  
Lunds universitet  
Lund, Sverige  
1982 sep. 1 → present

### Biträdande föreståndare

Centrum för Mellanösternstudier (CMES)  
Lunds universitet  
Lund, Sverige  
2009 dec. 1 → present

## Forskningsoutput

### **Efficacy of Ca-modified cypress biochar in immobilization of heavy metals in contaminated soils**

Shah, S. S. H., Nakagawa, K., Yokoyama, R. & Berndtsson, R., 2024 dec., I: Journal of Environmental Chemical Engineering. 12, 6, 114507.

### **The role of automated surface water distribution systems in energy-saving agriculture: A case study from central Iran's Arid Plateau**

Rahparast, D., Hashemy Shahdany, S. M. & Berndtsson, R., 2024 dec., I: Journal of Hydrology: Regional Studies. 56, 102036.

### **Microplastics in freshwater systems: A review of classification, sources, and environmental impacts**

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### **Dust source susceptibility in the lower Mesopotamian floodplain of Iraq**

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### **Land use transformations in the Brazilian Savanna: A decade of soil erosion and runoff measurements**

Schwamback, D., Amorim Brandão, A. R., Rosalem, L. M. P., Oliveira, P. T. S., Anache, J. A. A., Wendland, E., Berndtsson, R. & Persson, M., 2024 nov., I: Catena. 246, 14 s., 108412.

### **Quantifying Soil Loss in the Brazilian Savanna Ecosystem: Current Rates and Anticipated Impact of Climate Changes**

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**Forest restoration effects on soil preferential flow in the paleo-periglacial eastern liaoning mountainous regions, China**

Wang, D., Niu, J., Dai, Z., Yang, T., Miao, Y., Zhang, L., Chen, X. & Berndtsson, R., 2024 aug. 15, I: Journal of Cleaner Production. 467, 18 s., 142974.

**Modeling Ecosystem Regulation Services and Performing Cost-Benefit Analysis for Climate Change Mitigation through Nature-Based Solutions Using InVEST Models**

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**Interpretable machine learning for predicting the fate and transport of pentachlorophenol in groundwater**

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**Block-scale use of bioretention cells to restore the urban water balance: A case study in Tehran metropolis**

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**Entropy based approach for precipitation monitoring network in Bihar, India**

Prajapati, A., Roshni, T. & Berndtsson, R., 2024 feb., I: Journal of Hydrology: Regional Studies. 51, 101623.

**New spatial-globular structure polymer for pre-treatment in reverse osmosis membrane filtration**

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**Large discrepancy between future demand and supply of agricultural water in northwestern Iran; evidence from WEAP-MODFLOW-machine learning under the CMIP6 scenario**

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**Soil water infiltration characteristics of reforested areas in the paleo-periglacial eastern Liaoning mountainous regions, China**

Wang, D., Niu, J., Yang, T., Miao, Y., Zhang, L., Chen, X., Fan, Z., Dai, Z., Wu, H., Yang, S., Qiu, Q. & Berndtsson, R., 2024 jan., I: *Catena*. 234, 107613.

**Drivers of wind and water erosion for river sediments in a typical coarse sandy area in the middle reaches of the Yellow River**

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**Greening of China and possible vegetation effects on soil moisture**

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**Heavy metal immobilization and radish growth improvement using Ca(OH)<sub>2</sub>-treated cypress biochar in contaminated soil.**

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**Temporal cluster-based local deep learning or signal processing-temporal convolutional transformer for daily runoff prediction?**

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**Application of soft computing and evolutionary algorithms to estimate hydropower potential in multi-purpose reservoirs**  
Kayhomayoon, Z., Arya Azar, N., Ghordoyee Milan, S., Berndtsson, R. & Najafi Marghmaleki, S., 2023 sep., I: Applied water science. 13, 9, 183.

**Fusing morphometric characteristics with extreme precipitation indices for identifying the most vulnerable sub-basin at risk of flooding**

Singh, D., Karan, K., Singh, S. K., Chauhan, P. & Berndtsson, R., 2023 sep., I: Journal of Hydro-Environment Research. 50, s. 44-56 13 s.

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Torkashvand, M., Neshat, A., Javadi, S., Yousefi, H. & Berndtsson, R., 2023 sep., I: Water (Switzerland). 15, 17, 3134.

**Analysis of Four Decades of Land Use and Land Cover Change in Semiarid Tunisia Using Google Earth Engine**

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**Heavy Metal Transport in Different Drip-Irrigated Soil Types with Potato Crop**

Selim, T., Elkefay, S. M., Berndtsson, R., Elkiki, M. & El-kharbotly, A. A., 2023 juli, I: Sustainability (Switzerland). 15, 13, 20 s., 10542.

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**Review of Slow Sand Filtration for Raw Water Treatment with Potential Application in Less-Developed Countries**

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**Modernization in agricultural water distribution system for aquifer storage and recovery – A case study**

Jolfan, M. H., Hashemy Shahdany, S. M., Javadi, S., Milan, S. G., Neshat, A., Berndtsson, R. & Tork, H., 2023 maj 31, I: Agricultural Water Management. 282, 108270.

**Automated Low-Cost Soil Moisture Sensors: Trade-Off Between Cost and Accuracy**

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**Evapotranspiration in Semi-Arid Climate: Remote Sensing vs. Soil Water Simulation**

Chakroun, H., Zemni, N., Benhmid, A., Dellaly, V., Slama, F., Bouksila, F. & Berndtsson, R., 2023 mars, I: Sensors. 23, 5, 2823.

**Toxicity and source identification of pollutants in an urban river in Bangladesh**

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**Using machine learning to determine acceptable levels of groundwater consumption in Iran**

Ghordoyee Milan, S., Kayhomayoon, Z., Arya Azar, N., Berndtsson, R., Ramezani, M. R. & Kardan Moghaddam, H., 2023 jan., I: Sustainable Production and Consumption. 35, s. 388-400 13 s.

**Assessing Climate Change Impact on Water Balance Components Using Integrated Groundwater–Surface Water Models (Case Study: Shazand Plain, Iran)**

Soltani, F., Javadi, S., Roozbahani, A., Massah Bavani, A. R., Golmohammadi, G., Berndtsson, R., Ghordoyee Milan, S. & Maghsoudi, R., 2023, I: Water (Switzerland). 15, 4, 813.

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**Forage Potential of Cereal–Legume Mixtures as an Adaptive Climate Change Strategy under Low Input Systems**

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**InSAR-AI-Based Approach for Groundwater Level Prediction in Arid Regions**

Khodaei, B., Hashemi, H., Naghibi, S. A. & Berndtsson, R., 2023.

**Merging dual-polarization X-band radar network intelligence for improved microscale observation of summer rainfall in south Sweden**

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**PFAS in the Drinking Water Source: Analysis of the Contamination Levels, Origin and Emission Rates**

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**Soft computing assessment of current and future groundwater resources under CMIP6 scenarios in northwestern Iran**

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**Substantial carbon sequestration by peatlands in temperate areas revealed by InSAR**

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**Groundwater Quality and Potential Pollution in the Southern Shimabara Peninsula, Japan**

Nakagawa, K., Amano, H., Yu, Z. Q. & Berndtsson, R., 2022 dec., I: Water (Switzerland). 14, 24, 4106.

**Linking roots, preferential flow, and soil moisture redistribution in deciduous and coniferous forest soils**

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**How Can Sewage Sludge Use in Sustainable Tunisian Agriculture Be Increased?**

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**"Vattnet behöver få plats i riksdagen – Sverige behöver en vattenplan."**

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**Linking Hydro-Physical Variables and Landscape Metrics using Advanced Data Mining for Stream-Flow Prediction**

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**Urban flood damage claim analyses for improved flood damage assessment**

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**Quality Assessment and Rehabilitation of Mountain Forest in the Chongli Winter Olympic Games Area, China**

Liang, X., Yang, T., Niu, J., Zhang, L., Wang, D., Huang, J., Yang, Z. & Berndtsson, R., 2022 maj, I: Forests. 13, 5, 24 s., 783.

**Evaluation of modified Hilhorst models for pore electrical conductivity estimation using a low-cost dielectric sensor**

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**A Combination of Metaheuristic Optimization Algorithms and Machine Learning Methods Improves the Prediction of Groundwater Level**

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**Vicia—Micronucleus Test Application for Saline Irrigation Water Risk Assessment**

Souguir, D., Berndtsson, R., Mzahma, S., Filali, H. & Hachicha, M., 2022 feb. 1, I: Plants. 11, 3, 462.

**Areal Precipitation Coverage Ratio for Enhanced AI Modelling of Monthly Runoff: A New Satellite Data-Driven Scheme for Semi-Arid Mountainous Climate**

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**Is road-side fishpond water in Bangladesh safe for human use? An assessment using water quality indices**

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**A hybrid approach based on simulation, optimization, and estimation of conjunctive use of surface water and groundwater resources**

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**Can Potato Crop on Sandy Soil Be Safely Irrigated with Heavy Metal Polluted Water?**

Selim, T., Elkefay, S. M., Berndtsson, R., Elkiki, M. & El-Kharbotly, A. A., 2022, I: Water (Switzerland). 14, 8, 1226.

**Detecting the Greatest Changes in Global Satellite-Based Precipitation Observations**

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**Distribution of heavy metals and related health risks through soil ingestion in rural areas of western Japan**

Nakagawa, K., Imura, T. & Berndtsson, R., 2022, I: Chemosphere. 290, 133316.

**Drivers of Long-Term Land-Use Pressure in the Merguellil Wadi, Tunisia, Using DPSIR Approach and Remote Sensing**  
Khemiri, K., Jebari, S., Mahdhi, N., Saidi, I., Berndtsson, R. & Bacha, S., 2022, I: Land. 11, 1, 138.

**DynSus: Dynamic sustainability assessment in groundwater remediation practice**

Naseri-Rad, M., Berndtsson, R., Aminifar, A., McKnight, U. S., O'Connor, D. & Persson, K. M., 2022, I: Science of the Total Environment. 832, 154992.

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**Estimating peatland carbon sequestration in southern Sweden using InSAR**

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**Kombinerade X-bandsanläggningar som väderradar: Jämförelse med etablerade metoder för regnmätning**

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**Spatial Distribution and Source Identification of Water Quality Parameters of an Industrial Seaport Riverbank Area in Bangladesh**

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**Spatiotemporal variation of soil water potential and its significance to water balance for a desert shrub area**

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**Towards an integrated system modeling of water scarcity with projected changes in climate and socioeconomic conditions**

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**Urban Flood-Risk Assessment: Integration of Decision-Making and Machine Learning**

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**Efficient organic mulch thickness for soil and water conservation in urban areas**

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**Is climate or direct human influence responsible for discharge decrease in the tunisian merguellil basin?**

Khemiri, K., Jebari, S., Berndtsson, R. & Maalel, K., 2021 okt. 1, I: Water. 13, 19, 2748.

#### **Novel approach for predicting groundwater storage loss using machine learning**

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#### **Climate vs. Human Impact: Quantitative and Qualitative Assessment of Streamflow Variation**

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#### **Comparative analysis of root growth modules in HYDRUS for SWC of rice under deficit drip irrigation**

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