

Doctoral Researcher in Development of hydraulic  
modelling for nature-based solutions in flood and water  
quality management  
Aalto University

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Posted Mar. 8, 2023, set to expire Dec. 30, 2023

**Job Title** Doctoral Researcher in Development of hydraulic  
modelling for nature-based solutions in flood and water  
quality management

**Department** T213 Built Environment

**Institution** Aalto University  
, , Finland

**Date Posted** Mar. 8, 2023

**Application Deadline** Open until filled

**Position Start Date** Available immediately

**Job Categories** Graduate Student

**Academic Field(s)** Water Resources Engineering  
Ecological and Environmental

**Job Website** [https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-Researcher-in-Development-of-hydraulic-modelling-for-nature-based-solutions-in-flood-and-water-quality-management\\_R35769](https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-Researcher-in-Development-of-hydraulic-modelling-for-nature-based-solutions-in-flood-and-water-quality-management_R35769)

**Apply By Email**

### **Job Description**

Aalto University is an international community of bold thinkers where science and art meet technology and business. We are committed to identifying and solving grand societal challenges and building an innovative future. Aalto University has six schools with nearly 20 000 people, over 400 of which are professors. Our campus is located in Espoo, Finland. The School of Engineering is an international unit with nearly 70 talented professors and 3400 full-time students, including doctoral students.

Water and Environmental Engineering Research Group at Aalto University School of Engineering, Department of Built Environment invites applications for:

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Doctoral researcher position: Development of hydraulic modelling for nature-based solutions in flood and water quality management

We seek a qualified and highly motivated individual with enthusiastic attitude towards research in the rapidly developing field of environmental hydraulics and environmentally sound hydraulic engineering. Improved understanding of the dynamics and processes of water, sediment, vegetation, nutrients, and harmful substances is critical for sustainable river management. The fully-funded position is for a period of 1-3 years, and available to start in spring 2023 (negotiable).

**Responsibilities:** The successful candidate will work in a project titled “Development of hydraulic modelling for nature-based solutions in flood and water quality management”. The primary objective of this research is to investigate how model predictions on flow velocity distributions, water stages and transport of substances can be improved for environmentally preferable channel settings. To support the optimal design and management of such channels, the research will focus on physically based determination of flow resistance in vegetated flows. The work is methodologically based on laboratory flume experiments, field investigations, and modelling. The research is instructed by Dr. Juha Järvelä and Dr. Kaisa Västilä and supervised by prof. Harri Koivusalo.

**Qualifications:** Applicants must have a completed (or a nearly completed) Master of Science degree in a related field (engineering or natural sciences). Knowledge on fluvial environments, (environmental) hydraulics or fluid mechanics is required. Proficiency in experimental methods (e.g. laboratory flume investigations and ground-based validation of remote sensing applications) is considered an asset. Good oral and written proficiency in English is expected, with experience on scientific writing appreciated. The candidate must fulfil the eligibility criteria for doctoral students at Aalto School of Engineering. It is expected that the candidate will complete the doctoral studies in four years. The position is not open to post-doc applicants.

**Research environment:** The successful candidate will work within a team of senior and postdoc researchers and doctoral students led by prof. Harri Koivusalo. The topics of the research team broadly relate to computational description of hydro-meteorological processes, water resources management, and environmental hydraulics. The Environmental Hydraulics Lab (EHL) of the Aalto University has a solid track record of producing high-quality research contributions in the challenging research field of flow-vegetation-sediment interactions. The experimentation will be conducted using the modern EHL infrastructure, see [[url=https://www.aalto.fi/en/services/environmental-hydraulics-lab](https://www.aalto.fi/en/services/environmental-hydraulics-lab)]<https://www.aalto.fi/en/services/environmental-hydraulics-lab>.

**Contract terms:** The starting monthly salary for the position is around 2500 euros and increases as the studies progress up to around 3200 euros following the university salary system. The contract including

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occupational healthcare and other social security benefits is first made for one year, and the extension is subject to advance of studies and research. Working hours are flexible and can be partly organized remotely, but the candidate must be based in Finland for the duration of the contract. Helsinki area is special in being safe, clean, and close to nature, with a high quality of life. English is spoken everywhere. For more information about living in Finland: [[url=https://www.aalto.fi/en/careers-at-aalto/for-international-staff](https://www.aalto.fi/en/careers-at-aalto/for-international-staff)]<https://www.aalto.fi/en/careers-at-aalto/for-international-staff>.

To apply: All material should be in English and submitted in a single PDF file. Applications must include: \* Motivation Letter with a summary of previous research experience (master thesis for example) and a statement explaining the suitability of the candidate for the position (max two pages) \* CV including possible publications and contact information for two reference persons (max two pages) \* A copy of master's and bachelor's degree certificate and official transcript of records with courses and grades

Please note: The application should be submitted through the Workday system no later than Friday March 31, 2023. Email applications will not be considered. Aalto University's employees and visitors should apply for the position via our internal system Workday -&gt; find jobs (not external aalto.fi webpage of open positions) by using their existing Workday user account. Aalto University reserves the right to leave the positions open, to extend the application period and to consider candidates who have not submitted applications during the application period.

For further information, please contact Dr. Juha Järvelä ([juha.jarvela@aalto.fi](mailto:juha.jarvela@aalto.fi)). For recruitment process-related questions please contact HR Advisor Kirsi Kärkkäinen ([Kirsi.karkkainen@aalto.fi](mailto:Kirsi.karkkainen@aalto.fi)). For general information about doctoral studies at Aalto University: [[url=https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-engineering](https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-engineering)]<https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-engineering>.

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**Contact Information**

Please reference Academickeys in your cover letter when  
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**Contact**

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