Karlsruher Institut für Technologie

Seminar@IWU-WB

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Reconciling design criteria and fish passage performance: an ecohydraulics nexus

Reconciling design criteria and fish passage performance: an ecohydraulics nexus

Abstract

In the last three decades, scientists have questioned the efficiency of fishways as a tool to restore riverine connectivity for migratory fish populations globally and devoted efforts to discuss frameworks for future fish passage management and research. Upstream and downstream of hydropower dams or other instream barriers there are a series of hydromorphological and ecological processes that can influence the behaviour of migratory fish and, thus, affect the design and assessment of fish passage efficiency. For example, how much water (attraction flow) is needed to attract fish to fishways is a constantly recurring question. In this talk, I aim to discuss several factors that can influence the quantification of attraction efficiency, including challenges correlating hydraulic and fish metrics (e.g. attraction flow and fish movement), potential bias in experimental design, and limitations of methods used. Tackling these factors may shed light on improving fish passage design and efficiency.

Biography

Luiz Silva holds a bachelor degree in biology/fish ecology, a master's in Vertebrate Zoology (fish migration and fish passage efficiency) and PhD in Mechanical Engineering (turbine passage and guidance systems). His research interests span topics related to hydropower and fish, particularly fish passage for upstream and downstream fish migration around dams. Luiz's experience working in these topics include projects in the Global South and North (Brazil, USA, Australia and Switzerland). He is a member of the Fish Passage Conference Steering Committee and has been recently awarded the American Fisheries Society Fellow Award.

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