Master Project at EPFL, Fall 2022

KivuWatt methane extraction plant ©ContourGlobal

Title:	**Analysis of the effects of methane extraction on the stratification in Lake Kivu**
Supervisors:	Dr. Natacha Tofield-Pasche, Dr. Martin Schmid (Eawag)
Objectives:	To assess how the vertical density stratification in Lake Kivu is influenced by the ongoing methane extraction
Abstract:	Lake Kivu contains enormous quantities of methane and carbon dioxide dissolved in the deep water. Two power plants are currently extracting methane: KP1 plant (4.5 MW) and Kivuwatt (26 MW). The main risks for the lake stratification is caused by the reinjection of the washing and the degassing water into Lake Kivu. This project will analyse the approximately 2000 vertical profiles of temperature, conductivity, and pH, which were measured regularly by the Lake Kivu Monitoring Team since 2009.
Task:	1. Curation, analysis and visualisation of the data available 2. Quantitative assessment of the changes in the vertical stratificiation of Lake Kivu since 2009 and attribution of observed changes to the re-injection of degassed water from the extraction plants. 3. Mapping of the trajectories of the observed plumes of re-injected water
Required:	Good programming and data analysis skills
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