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Title: *Overview on radon measurements in arctic glacier meltwater*

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Due to global warming arctic glaciers are retreating. Studies on the changes and evolution of arctic glaciers are necessary as they do not only concern the arctic but the whole world. We present an alternative method to investigate the meltwater supplied by glacierized basins in introducing radioactive isotope measurements in combination with more classical parameters like temperature and electrical conductivity. Among the natural radioactive elements the most promising is the noble gas radon, more precisely its isotope ^{222}Rn; with a half life of 3.8 days it allows for continuous measurements.

On a target landbased polythermal Svalbard glacier, situated in the south-western part o fWedel-Jarlsberg Land in SW Spitsbergen, radon levels in meltwater show surprisingly high values up to 33 Bq/L in the accumulation season. In the ablation period varying radon concentrations can be linked to mixing of meltwater from different origins, roughly supraglacial - englacial and subglacial. Only meltwater recently in contact with rock or sediments can be charged with radon.

Results from five years radon measurements on Werenskiold glacier covering both glaciological seasons, are presented and discussed. The results of continuous measurements give information on drainage footpaths and the style and system of the drainage of glaciers.

Radon measurements contributed to a study of the water flow out of a moraine of a neighboring glacier.