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# VU Science Experiments (VUSE) for Igluna, a science showcase for a Moon ice habitat

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For Igluna, a project organized by Swiss space center and ESA_lab, teams from 14 universities collaborate to investigate the possibility of realizing a human habitat in South Pole Moon-Ice Craters. This will be done by building a habitat in a glacier in Zermatt, Switzerland [1]. The VU Science Experiments (VUSE) [2] team will focus on the geological, glaciological and astrobiological experiments that one would want to conduct in the hypothetical situation of building a habitat in ice on the moon. The research will consist of two parts: Ice core analysis and geological exploration of the glacier and surrounding area. Ice core analysis will be performed to gather an understanding of the chemical composition of the glacial ice. By exploration of the surrounding area we want to get a better understanding of the glacier itself and the geology to complement our chemical analyses. Our equipment will be in one of our two subsystems: 1) our ILEWG ExoGeoLab on top of the glacier [3] and 2) inside the SMART-ICE lab in the habitat, also created by ILEWG. This equipment includes cameras, a vis-NIR spectrometer, a microscope, telescopes, a seismometer and drones. A third component of the project will be the remote support and control. For example the use of telescopes to remotely indicate the location of potential samples to astronauts or the remote control of drones. Using chemical analysis together with geological observations, we will be able to constrain the history of the glacier in Zermatt. This will all be done within a realistic comparable ice research on the south pole of the moon.
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References: [1] https://www.spacecenter.ch/igluna/, [2] De Winter, B. (2019) LPSC50, Abstract #1558 [3] Lillo, A (2018), LPS49, Abstract #1242.