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Proposed acoustic instrument for investigating the lakes on Titan

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Current studies by both NASA and ESA include possible landers for Saturn's moon Titan. One possible option for the landing site is to target the probe to one of the lakes.

This would allow exciting measurements of the lake composition as well as conclusions on the chemistry, taking place on Titan. It would also allow measurements of the physical properties of these lakes, like properties of the liquid and depth of the lakes.

We will outline the possibilities of a lightweight acoustic instrument, allowing to measure e.g. speed of sound in the lakes as well as, applying sonar technique, to obtain information on the depth of the lake and characteristics of its ground.

Considerable spin-off can be obtained from studies performed for the Huygens Surface Science Package SSP, which included an acoustic sensor API-S. At the time Huygens/Cassini was planned it was considered to land in a Titan ocean.