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STAR : ODDI

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# Star-Oddi temp loggers used to explore the effects of drip water temperature on the formation of speleothems



Researchers from the <u>Connected Waters Initiative Research Centre at UNSW</u>, Australia (Fig. 1\*) have used the unique conditions at the Wellington Caves, New South Wales to study recharge processes through highly variable unsaturated fractured limestone. For the first time, high-precision temperature measurements and stalactite drip rate monitoring were made, to explore the effects of drip water temperature on the formation of speleothems (i.e. stalactites and stalagmites). Due to their small size Star Oddi temperature probes (<u>DST micro-T</u>) were ideal for placement directly on to stalactites to measure in-situ temperatures at high temperature and temporal resolution (Fig. 2\*).

In controlled experiments, irrigations of known volumes of water were applied to the land surface above the caves and the response was measured after a couple of hours within the cave. Surprisingly, the results show that the drip water temperatures were up to 1.5  $^{\circ}\text{C}$  cooler than the ambient cave air temperature.

This temperature difference was attributed to evaporative cooling (i.e. loss of latent heat upon evaporation) as the infiltrating water flowed down the limestone. The findings, which were reported in Scientific Reports, have implications for the use of cave stalactites and stalagmites for records of past climatic conditions.

To read the whole research paper please click on the link.

\*Photo credits: Martin S. Andersen

### Published research using our sensors



You can view an extensive collection of scientific papers and posters using our sensors in various types of aquatic and fisheries research which can be found on our website. To view the research, please click on the following <a href="mailto:link.">link.</a>

If you have a story or research to share with us, please contact us.



## Product in focus: DST CTD - conductivity, temperature and depth logger



DST CTD is the smallest salinity logger on the market that measures and records conductivity (salinity), temperature and pressure (depth). This small and cost effective CTD has been much welcomed by marine and fisheries scientists around the world.

The DST CTD is custom calibrated and the three conductivity ranges that Star-Oddi offers are 0.3 to 5 mS/cm, 3 to 37 mS/cm and 13 to 50 mS/cm. The temperature range is -1 to  $+40^{\circ}\text{C}$  ( $30^{\circ}\text{F}$  to  $95^{\circ}\text{F}$ ) and the logger is available with various depth ranges, maximum down to 2000m. The DST CTD has a memory size of 87,217 measurements per sensor. Optionally the depth measurements can be skipped (DST CT) increasing the memory up to 130.826 measurements per sensor.

For more information, please see the DST CTD product site

### Star-Oddi Online

Now you can find product updates, video tutorials and general information about Star-Oddi on:



#### Star-Oddi takes part in the ALS Ice Bucket Challenge



Our sales manager, Snorri, was challenged to take part in the ALS In Bucket Challenge. He recruited the help of the rest of the Star-Oddi tea who were more than happy to help can be seen on this link.

Click here to support ALS research Click here to support the Icelandic MND association

# Earthquakes and eruptions in Iceland's biggest glacier - See it live



Iceland is once again in the spotlight for its dynamic geologica activity.

In mid-august the Bardarbunga region in the north-west part of Vatnajokull glacier was hit by a swarm of earthquakes, some as high in magnitude as 5.3 on the Richter scale. On August 29 lava begun to erupt from a fissure in th Holuhraun lavafield, which is located about 15km north-east

of Bardarbunga. The fissure reached about 1km in longitude, but the eruption only lasted for about three to four hours.

Two days later, on August 31st, a second fissure eruption started in Holuhraun. This eruption is much bigger than the first one and is still ongoing at the

ongoing at the moment with lava covering about 50 square kilometers. On September 5th two new fissures were detected, but one of them has now ceased erupting.

This part of Iceland is very remote and uninhabited. The area is however popular with tourists, but it has been closed off for traffic. Only scientists and news reporters have been allowed to enter with limited access. The area has had to be evacuated a few times when large concentrations of gas have reached dangerous levels.

Click on the following link to view a live webcam from Bardarbunga:

http://www.livefromiceland.is/webcams/bardarbunga-2/

<u>Here</u> you can also see an amazing video of the eruption taken by a quadcopter.

### **Data Storage Tags - DSTs**

Star-Oddi has been manufacturing and developing DSTs since 1993. The data loggers are used for various studies, such as fish tagging, fishing gear studies and oceanography. You can find our whole product range <a href="https://example.com/here-beta-bases-beta-bases-beta-bases-beta-bases-beta-bases-beta-bases-beta-bases-bas

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