



LUCKY SCALES

UNDERSTANDING THE DYNAMICS OF DEEP-OCEAN HYDROTHERMAL ECOSYSTEMS

The LUCKY SCALES project aims to acquire, process and model time-series data to better understand the dynamics of mid-ocean ridge hydrothermal ecosystems. The fluid flows which feed these ecosystems are controlled simultaneously by kilometre-scale hydrothermal circulation driven by magmatic heat and by small-scale fluid circulation.

Using a multidisciplinary approach, LUCKY SCALES will study how these factors interact to control the biodiversity of ocean-ridge hydrothermal fields and understand how the biodiversity will respond to environmental changes.

A network of new seabed instruments will be produced for this purpose to complement the Lucky Strike quasi real-time monitoring system of the mid-Atlantic ridge hydrothermal field. This network of instruments will constitute a prototype for multidisciplinary environmental monitoring of the deep ocean.

An important element of the project involves working on data to characterise as comprehensively as possible the environmental changes and responses of hydrothermal vent fauna of the deep seabed. The project is also seeking to enhance the knowledge that is needed to minimise the impact on biodiversity of potential deep mining of the metal-rich deposits associated with hydrothermal vents. The new instruments, which will be added to the Lucky Strike observatory, will be capable of generating environmental alerts.

Partners

Research centers

IPGP, Paris [\[Project Developer\]](#)
Ifremer, Brest
Université de Bretagne Occidentale,
Laboratoire de Physique des Océans (LPO),
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Université de Toulouse - Paul Sabatier
Toulouse 3, Géosciences Environnement
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Funder

- Agence Nationale de la Recherche

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