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News

- Fundamental Research
- [Geology - Sedimentology](#)



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ERC Synergy Grant 2022: IFP Energies nouvelles' project on the understanding of the impact of climate change on underground 'karst' water reservoirs is a winner

Benoit Noetinger of IFP Energies nouvelles (France), Bojan Mohar of the Ljubljana University (Slovenia), Philippe Renard of Neuchâtel University (Switzerland) and Marco Dentz of IDAEA-CSIC (Spain) have won the prestigious ERC Synergy Grant for their KARST fundamental research project. The grant will enable the international, multi-disciplinary research team to update the physical laws governing water flow and the transport of pollutants in underground cave systems (karst aquifers).

Karsts are geological formations comprised of channels and gaps that provide water to over 25% of the world's population. Climate change, with the associated occurrence of extreme phenomena such as drought and heavy rain, affects karsts. Due to their particular structure, these environments may react to weather phenomena very suddenly, which can give rise to the extremely rapid transport of pollutants.

The objective of the KARST project is to develop a multi-scale model, starting from a detailed understanding of the flows in individual channels, confirmed by real and experimental data, leading to global simulations of the behaviour of all aquifers with respect to external events (weather, dams, etc). The impact of extreme climate events on karst aquifers will be studied using well-documented cases that have sometimes resulted in natural disasters. The fascinating dynamics of the formation of karst aquifers, which are self-organizing systems, will also be studied.

“We are very pleased to have been selected for the ERC Synergy Grant, not only because it represents recognition of the quality of the scientific work our team has conducted, but also because it is important to understand the mechanisms of how karsts are formed and to study the impact of climate change on these aquifers in order to continue to ensure most of humanity has water”, remarked [Benoit Noetinger](#), PhD (Physics), a researcher at IFPEN.

The grant awarded to the KARST project is for 10 million Euros, over 6 years.

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KARST research project : IFPEN recipient of an ERC Synergy Grant
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