

BigCEES - Using Big Data to Model the Impact of Climate Change

Big model and Big data in Computational Ecology and Environmental Sciences



A scientific challenge invites teams of 3 to 4 scientists to propose innovative research, new or disruptive topics, to reduce identified barriers, but also to promote interdisciplinarity and dissemination of information.

Due to an unprecedented data deluge, there is hope for monumental discoveries in environmental science fields and related disciplines. Nevertheless, critical statistical methodological challenges must be addressed to **overcome the computational constraints**, including non-linear effects, repeated measures and other aspects of heterogeneity in big data sets.

The **BigCEES project** puts forward innovative and novel methodology to develop tools that will overcome the big data challenge in Ecology and Environmental Sciences and thus reveal nature's secrets, currently hidden in big data.

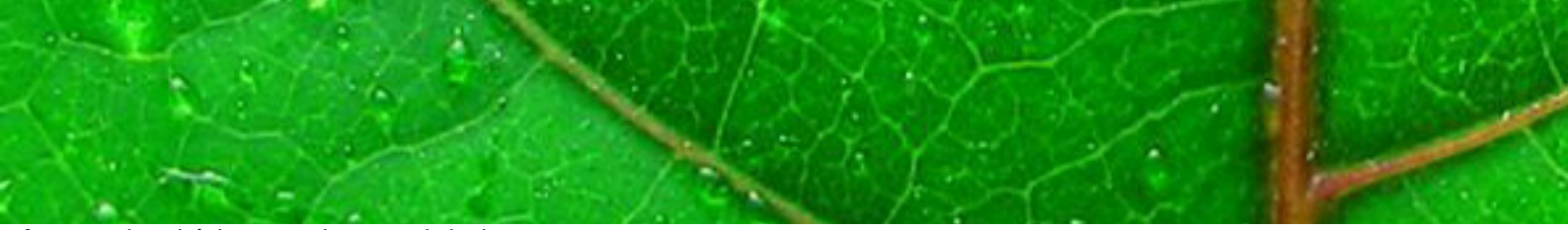
To deal with all these challenging issues, the project integrates the complete trans-disciplinary scientific continuum, from the theoretical and methodological tools based on modern and computationally intensive methods up to three selected applications, in strong connection with the local actors of the Basque Country and South Aquitaine nearshore regions and the objectives of the **E2S UPPA** and **MIRA Federation** projects.

This novel methodology enables scientists to explore and analyze the existing massive datasets and help to design future experiments and numerical models, in a series of emerging and/or trans-disciplinary research fields. In particular, it has a specific interest to understand and model the impact of climate change on environment and natural resources and to predict coastal risk due to extreme events in order to make better decisions for socio-ecological management.

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