

# Models Databases Position

« Consolidating databases for coupling  
economical, ecological and physical  
functioning of the biosphere-atmosphere  
system»

## Context

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There is a growing concern that predicting future climate, economy, and ecosystems evolution requires coupling these components dynamically, as there are evidences of feedback mechanisms. The increased occurrence of extreme events (storms, heat waves, droughts) or the nitrogen cascade are good examples of these feedback mechanisms. Such a dynamic approach is required to support decision makers, and for analysing the benefits and impacts of public policies on climate and the environment.

The complexity of such a coupled system requires identifying the processes and data to be coupled, as well as the development of couplers. The flagship project 5 of BASC aims at developing such tools and linking together the models developed by BASC teams. A first step in coupling models is to link together and aggregate the databases associated with each model. The considered databases are models inputs and outputs but also future scenarios (economy, land use, climate).

## Position

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Two year full time position for a computer programming & database specialist with modelling skills.

- Identify requirements for database input of the candidate models in BASC. The goal is not to be exhaustive but to have a representative sample of models, whether existing or underdevelopment within the various units involved in BASC. This phase should take into account the spatial and temporal scales specific to each model.
- Identify the databases used in BASC models and analyse complementarities and overlaps, as well as identify which databases are managed within BASC laboratories or at the international level.
- Develop computing tools to connect/interoperate? databases with various formats, extract and import data for/from BASC models. These tools should include elements for changing spatial or temporal scale.
- Draft the operating manuals for these tools and organise training seminars related to their use.

## Candidate Profile

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- The candidate must be familiar with computer programming and know databases formalism (SQL, R, ...).
- He/she can be trained in computer programming or in modelling with a solid experience in database.
- The candidate must demonstrate a strong ability and motivation to work at the interface between research teams and scientific disciplines.

## Salary and location

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The candidate will be based at INRA in Thiverval-Grignon (ECO-PUB and EGC labs).

The salary will be between 2000 and 2800 euros depending on the candidate experience.

Opportunities for renting a room in Grignon.

Transport to and from Paris is quick and easy (see <http://www-egc.grignon.inra.fr/>)

## Contacts

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