We are advertising one post-doctoral position in the framework of the *Climate change Impacts on Global Oceanic Ecosystems & Fisheries* (CIGOEF) project funded by the French National Research Agency (ANR). We seek one talented scientist in tuna populations and ecosystem modeling. The position will be located in Sète, in the South of France, in the MARine Biodiversity, Exploitation and Conservation (MARBEC) laboratory (http://www.umr-marbec.fr/en/).

**The CIGOEF project**

Oceanic ecosystems cover more than 70% of the Earth surface and provide major ecosystem services. But climate change is threatening these ecosystems, with unknown consequences for essential services such as fisheries, and potential feedbacks to the climate system through alteration of the biological carbon pump.

The CIGOEF project builds on recent advances in marine ecosystem modeling. These include the development of an integrated ecosystem model (APECOSM) based on the Dynamic Energy Budget (DEB) theory (Kooijman, 2010). APECOSM has been coupled the physics of the ocean (model NEMO) and its biogeochemistry (model PISCES). It has been embedded in the IPSL Earth System Model to project the impacts of climate change on marine ecosystems (e.g. Lefort et al., 2015), to study the feedbacks of ecosystems on the carbon cycle (e.g. Aumont et al., 2018), and to develop scenarios of global tuna populations and fisheries (e.g. Dueri et al., 2016). CIGOEF aims at further refining this coupled modeling framework. In particular, CIGOEF will study the effects of climate change on the bacterial loop and jellyfish populations at the global scale, and quantify their feedbacks to the carbon cycle and the climate system. It will also study the impacts of climate change on tropical and temperate tuna populations, fisheries and markets, quantify their vulnerability and study adaptation strategies through the development of integrated scenarios.

**Description of the position:**

The postdoctoral researcher will explicit tropical (skipjack, yellowfin, bigeye) and temperate (albacore, bluefin) tuna populations in the DEB-based ecosystem model APECOSM and assess its predictions against available data. He/she will improve the representation of temperature, oxygen and pH effects on metabolism. He/she will improve the representation of schools’ size dynamics that might be controlling population dynamics (Maury, 2017). Finally, the postdoc will investigate the effects of climate change on tuna populations and communities with global-scale simulations. The work will be carried out at the MARine Biodiversity, Exploitation and Conservation (MARBEC) laboratory in Sète with collaborations with scientists in the Mediterranean Institute of Oceanography (MIO) in Marseille.

**Duration, salary:** The successful candidate will be hired by IRD for 24 to 36 months with a salary depending on experience. The position is available to begin as soon as possible.
**Required Experience:** A PhD is required, with an experience in oceanography, fishery science or marine ecology and with good quantitative skills (applied mathematics) and a strong interest for numerical modeling. Ease in using linux and programming languages (python, C/C++) is necessary.

**Contact for applications:** Applications should be sent as soon as possible to Olivier Maury ([Olivier.Maury@ird.fr](mailto:Olivier.Maury@ird.fr)). They should include a CV with publication record, a statement of research interests and the names of two referees. Review of applications will begin as soon as received, and the positions will remain open until filled.

**References:**