

# Séminaire de Ronan Fablet à l'IPSL

**Nom :** Séminaire de Ronan Fablet à l'IPSL

**Titre :** Learning & Dynamical Systems: application to ocean dynamics

**Laboratoire :**

**Nom du conférencier :**

**Son affiliation :**

**Date et heure :** 15-05-2019 10h30

**Lieu :** Campus de Jussieu, salle 105 du LIP6 couloir 25-26 au 1er étage

**Résumé :**

Learning techniques and data-driven approaches become relevant alternatives to classical model-driven approaches for a large number of application domains, including for the study of phenomena governed by physical laws. They offer new means to take advantage of the potential of observation and / or simulation big data. In this talk, we will discuss data-driven strategies for the identification, simulation and reconstruction of dynamical systems with illustrations on ocean monitoring applications (e.g., reconstruction of sea surface, maritime traffic surveillance). We will specifically address how neural networks can provide novel means for the data-driven identification of representations of dynamical systems, which are imperfectly observed (e.g., noisy data, partial observation, irregular sampling...). We might further discuss the relevance of dynamical system theory for the understanding of state-of-the-art neural networks, especially residual nets.

Ce séminaire a lieu dans le cadre du groupe IA et Climat qui réunit des chercheurs de l'IPSL et le LIP6 organise un séminaire bi-trimestriel pour présenter des recherches pluridisciplinaires concernant l'utilisation des méthodes d'intelligence Artificielle dans les sciences de l'environnement et du climat. Cette initiative est soutenue par le groupe de travail SAMA (Statistiques pour l'analyse, la modélisation et l'assimilation) de l'IPSL.

Ronan Fablet got an engineer degree from ISAE-SUPAERO (Insitut Supérieur de l'Aéronautique et de l'Espace) Toulouse, France (1997), a MSC. In Applied Math from Univ. Paul sabatier, Toulouse, France (1997) and a the Ph.D. degree in signal processing and telecommunications from the University of Rennes/INRIA Rennes, France (2001). In 2002, he was a INRIA postdoctoral fellow with Brown University, Providence, RI, USA. From 2003 to 2007, he held a full-time research position with IFREMER Brest in the field of signal and image processing applied to fisheries science. In 2008, he joined the Signal and Communications Department, IMT Atlantique Bretagne-Pays de la Loire (formerly Télécom Bretagne), as an Associate Professor, and has been holding a full Professor position since 2012. He was a Visiting Researcher with Institut de Recherche pour le Développement/Instituto del Mar del Peru, Peru (Peruvian Sea Research Institute) in 2011 and a Visting Professor at IMEDEA (CSIC/UIB, Spain) in 2016. His main research interests are in data science with a main application field in ocean

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monitoring and surveillance. He has led national and international programs (e.g., EU STREP AFISA, ANR MN EMOCEAN, ANR ASTRID SESAME). He co-authored more than 200 articles and communications in peer-reviewed conferences and journals.

Some references: (full paper available on [my researchgate.net](http://my.researchgate.net))

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