Curriculum vitæ - 2025

Key activities through time

- Born in 1966
- 1989-1992 : PhD thesis on the "Study and numerical simulation of the general circulation of planetary atmospheres".
- 1992-1994 : Post-doc with experience at NASA-Ames (California, USA) and Oxford University (GB).
- 1994 : permanent position as a research scientist.
- Since 2000 : leading the development and tuning of a global atmospheric model LMDZ used as the atmospheric component of a CMIP involved coupled model.
- Since 2000 : membre of the coordination of the development of this coupled model.
- 2005 : Habilitation à dirirger des recherches (HdR) on the "Representation of direct and inverse transport in global climate models and study of couplings between composition and atmospheric dynamics on Titan."
- 2006-2007 : 18 months in Laboratoire de Physique de l'Atmosphère et de l'Océan (Dakar) in the frame of the "African Monsoon Multi-disciplinary Analyses" international program, the modeling part of which I was coordinating.
- 2009 : promoted senior scientist
- 2008-2017 : deputy head of a research laboratory of 200 people.
- 2014 : organisation of a Workshop in Garmisch-Partenkirchen about climate model tuning.
- 2010-2024 : membre of the scientific comitee of MeteoFrance
- Since 2011 : member of the scientific council of Cerfacs

Domains of expertize

- Study and numerical modeling of the general circulation and climate of terrestrial planets (Earth, Mars, Venus)
- Coupling between atmospheric dynamics, chemistry and haze micro-physics on Titan.
- Numerical modeling of the Earth climate and climate change.
- Numerical modeling of the advection of trace species in the atmosphere.
- Inversion of atmospheric transport and application to the detecting of nuclear test in the frame of the CTBT.
- Development of an original mass flux scheme for the parameterization of the convective boundary layer (first "EDMF" scheme published).
- Understanding and reduction of the Eastern Tropical Ocean systematic warm biases in coupled models
- Parameterization of pyro convection.
- Study and numerical simulation of the West African climte and of its coupling with Saharian dust emission and transport
- Participation to impact studies on Health and agriculture in West Africa.
- Opening a new field of research based on the use of machine learning techniques (history matching) for the tuning of climate model and parametric exploration.
- Modeling of energetics of buildings under the atmospheric column of a global or regional model, basesd on a Monte Carlo integration of physics equations.

Publications : h-index 52, 108 citations / publication on average