

# Kaëlig CASTOR

Senior Research Scientist

Acoustics/Audio/Signal Processing/Mechanics

International Mobility

130 Rue Saint Maur  
75011 PARIS  
FRANCE  
Cell : +33 6.63.22.41.95  
[ckaelig@gmail.com](mailto:ckaelig@gmail.com)  
<http://kaelig.castor.free.fr>

Date / place of birth Nov. 27<sup>th</sup> 1974 / Provins, France

Citizenship French

Marital status Single, no kid

## Education

**PostDoc in Acoustics**, UCSD, USA (2003)  
**PhD in Acoustics**, University of Le Mans, FRANCE (2001)  
**Master in Applied Acoustics**, Université du Mans, FRANCE (1997)  
**MSc in Applied Physics**, University Paris XI- Orsay, FRANCE (1996)



## Languages

French (mother tongue), English (fluent), Spanish (good level)

## 2007-present – Senior Research Scientist – CGG – France

- Software development, embedded systems in vibroseismic acquisition crews for earth subsurface imaging.
- Publication of patents and scientific articles, oral presentations in international specialized meetings.
- Signal processing on extensive field datasets.
- Consequent improvement in the fidelity and consistency of the acoustic source.
- Operational and technical supervision of crew startups and large-scale field tests for numerous major oil companies (Saudi Aramco, Qatar Petroleum, Shell, Total, ENI, Repsol, Apache, Khalda, PDO, Sonatrach, OMV).

## Award/Distinction :

- 1<sup>st</sup> price in Technological Innovation CGG 2015 « Above and beyond » for a method called **CleanSweep™** that lowers significantly the harmonic noise in the vibroseismic source. It rewards the successful accomplishment in the project initialization, development and industrialization

## 2004-2006 – Research Engineer – Laboratoire de Détection et Géophysique, Département. Analyse Surveillance Environnement, Commissariat à l’Energie Atomique – France

- Mathematical modeling, numerical simulation of hydroacoustic wave propagation (CTBT).
- Parallelisation of a 3D parabolic equation code on CEA super computers.
- Waveform analysis after propagation in ocean and atmosphere. Geophysical data processing for large scale experiments.
- Work performed for the French ministry of defense organization named DGA (national security clearance).

## 2001-2003 – Research Assistant – Marine Physical Laboratory Scripps Institution of Oceanography, University of California San Diego – USA

- Postdoc contract supported by *Office Naval Research* (CTBTO) and supervised by Pr. W. A. Kuperman.
- Numerical modeling and computation, small scale ultrasonic experiments.
- Equations of nonlinear acoustics and weak shock propagation. Nonlinear effects in long range propagation. Parametric interaction, nonlinear frequency-mode coupling in an acoustic waveguide.

## 1997-2001 – PhD – Teacher (Moniteur et Attaché Temporaire à l’Enseignement et à la Recherche) – Université du Maine, Le Mans – France

## Research :

- Acoustical and electrical modeling of ionic loudspeakers using point-to-plane electrodes in the air.
- Modeling of the acoustic pressure associated with heat and momentum transfer between charged and neutral particles.
- Electrical model of the equivalent electrical circuit, derivation of the electroacoustic efficiency.
- Parametric study and optimization of the electrical and geometrical configuration.
- Design, construction and testing of the new experimental devices with a high-current modulation.
- Laboratory instrumentation interfacing with *HP VEE*.
- Electrical and acoustical measurements in anechoic chamber, electromagnetic insulation, directivity measurements.
- Measurements of the gas flow and the acoustic particle velocity using Laser Doppler Anemometry.

## Teaching Assistant :

- Graduate degree (Master Degree in Applied Acoustics) and Undergraduate (Vibrations- Acoustics-Signal Processing).
- Designed, prepared and taught laboratory exercises in Acoustic, Vibrations, Physical Acoustics, Electronics and Electro-Acoustics.
- Designed, prepared and taught classroom exercises in Mechanics, Electronics and Electro-Acoustics Physical Acoustics, Vibrations Signal Processing, Electromagnetism, Mathematics.

Scientific Papers, [Patents](#) and participation to International Conferences  
(see <http://kaelig.castor.free.fr> for complete bibliography and to download all papers)

## Hobbies

Saxophonist in [brass bands](#). Drummer in gigs, practice jazz piano, bass and enjoy music composition and [MAO](#).