

November 2022

## CURRICULUM VITAE

Anny CAZENAVE

### Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS)

#### Centre National d'Etudes Spatiales (CNES)

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web page : <http://www.legos.obs-mip.fr/members/cazenave> (with full CV; also available at

<https://www.academie-sciences.fr/fr/Liste-des-membres-de-l-Academie-des-sciences/-/C/anny-cazenave.html>)

#### Education:

Ph.D Thesis (Doctorat d'Etat) in Geophysics (Rotation of the Earth), *University of Toulouse*

#### Professional experience:

Director for Earth Sciences at the *International Space Science Institute* (ISSI), Bern, Switzerland (2013-2021);

Emeritus scientist at LEGOS/CNES, Toulouse, France;

Invited professor at the Collège de France, 2012-2013, Annual Chair 'Développement Durable- Environnement, Energie et Société';

Deputy Director of LEGOS between 1996 and 2007.

#### Research interests: Application of space techniques to geosciences

Applications of remote sensing to:

**Satellite geodesy:** gravity field and marine geoid; Earth rotation and polar motion; tides; precise positioning by space geodesy techniques and applications to tectonic motions, vertical crustal motions, geocenter motions; temporal changes of the Earth gravity field and global mass redistributions among the surface fluid envelopes of Earth (oceans, atmosphere, land);

**Climate research:** sea level variations at global and regional scales (observations from satellite altimetry and tide gauges; study of climatic causes: ocean thermal expansion and salinity effects, land ice melt, land water storage change, projections.); global water cycle and land hydrology from space.

#### Publications:

250+ articles in international refereed journals (ISI Web of sciences: 15 600 citations, H index: 64, *sept 2022*); several monograph chapters; Editor/co-editor of 12 books, including 'Satellite altimetry over oceans and land surfaces', Stammer & Cazenave editors, Earth observation of global changes book series, CRC Press, 620 pages, 2018, and 'Satellite Altimetry and Earth Sciences. A handbook of Techniques and Application, Fu & Cazenave editors, Academic Press, Vol. 69, San Diego, USA, 2001'. Author/co-author of 3 popular books, including '*La Terre et l'environnement observés depuis l'espace*', Fayard, 2013.

#### International responsibilities (current and recent past only):

**Ongoing:** Scientific coordinator of the 'Coastal Sea Level' project of the ESA '*Climate Change Initiative*'; Vice-chair ERC Synergy panel 2022; President of the Geodesy section of the *American Geophysical Union*; Member of the ESSC (*European Space Science Committee*) of the European Science Foundation; Member of the "Scientific Advisory Board" of the 'Centre for Earth Evolution and Dynamics', Oslo University, and of the 'Climate Impact Science Research Programme, Center for Climate Research', Singapore.

**Recent:** Member of the panel « Assessment of Partnership Options for a Small Satellite System for Collecting Scientific Quality Oceanic and Coastal Data », *National Research Council, The National Academies, USA (2021-2022)*; Member of the Advisory Committee of *Future Earth (2018-2020)*; Member of the Joint Science Committee of WCRP (*World Climate Research Programme*) (2013-2018); Lead author of the 4<sup>th</sup> and 5<sup>th</sup> Assessment Report (*Sea Level chapter*) of IPCC (*Intergovernmental Panel on Climate Change*) Working Group I (2004-2007 and 2008-2013). Member of several panels of the NRC (*National Research Council of the National Academies*). Member of the 'Advanced Grant, Earth System Sciences' panel of ERC (*European Research Council*) (2008-2015).

#### National Responsibilities (current and recent past only) :

**Ongoing:** Member of the 'Haut Conseil' of the TGIRs (*Très Grandes Infrastructures de Recherche*, Ministère de l'Enseignement Supérieur, de la Recherche et de l'Innovation;

**Recent:** Member of the ‘Comité d’Orientation Scientifique’ of the Toulouse 3 University (2020-2022) ; Expert, Institut des Hautes Etudes de Défense Nationale (2020) ; Member of the ‘Comité d’Orientation Stratégique’, IRD (Institut de Recherche pour le Développement) (2016-2020) ; Member of the ‘Conseil d’Administration’ of Météo-France (2015-2018) ; Chair of the Scientific Council of Météo-France (2010-2015); Member of the ‘Comité d’Orientation Stratégique’ of IRD (*Institut de Recherche pour le Développement*) (2016-2020); Member of the ‘Conseil Supérieur des Programmes’, French Ministry of Education (2013-2016); Member of the ‘Conseil d’Administration’ of CNRS (*Centre National de la Recherche Scientifique*) (2009-2015).

#### **Supervisor of 26 PhD theses:**

S. Daillet (1984), P. Pinet (1985), S. Calmant (1987), P. Gaudon (1988), J.C. Marty (1989), M. Monnereau (1990), J.J. Valette (1992), C. Thoraval (1994), P. Calcagno (1995), L. Soudarin (1995), P. Gegout (1995), R. Abarca del Rio (1997), P. Lecroart (1997), G. Ramillien (1998), F. Bouille (2000), F. Mercier (2001), S. Mangiarrotti (2003), C. Cabanes (2003), I. de Oliveira Campos (2004), T. Ngo-Duc (2005), A. Lombard (2005), F. Frappart (2006), V. Enjolras (2007), W. Llovel (2010), L. Xavier (2012), B. Meyssignac (2012), H. Palanisamy (2016), H.B. Dieng (2017).

#### **Coordination of (or participation to) national and international projects:**

##### **Current and recent past only**

P.I. of an ERC (*European Research Council*) ‘Synergy Grant’ (2020-2024);  
Science leader of the ‘Coastal Sea Level’ project of the ESA ‘Climate Change Initiative’ (4 partner teams) (2018-2022); Partner of the ESA project ‘Sea level budget closure’ (2017-2020); Science leader of the ‘Sea Level’ project of the ESA ‘Climate Change Initiative’ (15 partner teams) (2011- 2017);  
Co-investigator of several satellite altimetry missions (Topex/Poseidon, Jason-1, Jason-2, Jason-3) for geodesy and sea level studies

##### **Editorial responsibilities:**

Current: Member editor of PNAS (*Proceedings of the National Academy of Sciences, USA*); Guest editor of *Surveys in Geophysics*; Member of the editorial board of « Nature Scientific Data » journal; Previously: Editor of EOS (*American Geophysical Union*) and Editor-in-chief of ‘*Earth and Planetary Science Letters*’.

**International invited lectures:** between 4 and 6 every year.

**Organisation of 12 international workshops** (6 since 2015 on water resources, coastal sea level, coastal zones, geohazards, deep Earth’s interior, global change in Africa).

##### **Honors and Awards:**

###### **Scientific Academies**

Member of the *French Academy of Sciences* (2004)  
Foreign member of the: *National Academy of Sciences* (NAS, USA) (2008); *Indian National Science Academy* (INSA, New Delhi, 2012); *Royal Academy of Belgium* (2014); *Royal Society* (UK, 2021).

###### **Others**

Member of the *Academia Europaea* (1990); Fellow of the *American Geophysical Union* (1996); Fellow of the *American Association for the Advancement of Science* (AAAS) (2012); Member of the *Bureau des Longitudes*, Paris (2014) and of the *European Academy for Aeronautics and Space* (1986).

###### **Scientific Awards**

Leonardo da Vinci Prize, European Academy of Science (EURASC) (2022); Women in Aerospace Prize (2022); Vetlesen Prize, Columbia University (2020); BBVA ‘Frontiers of Knowledge’ Award, category ‘Climate Change’ (2019); Nansen Polar Bear Award of the *Norwegian Nansen Center* (2016); Georges Lemaître Prize of the *University Catholique de Louvain* (2015); Bowie Medal of the *American Geophysical Union* (2012); Prize ‘Emile Girardeau’ of the ‘*Académie de Marine*’ (2010); Prize Manley Bendall, Medal ‘Albert 1<sup>er</sup> de Monaco’ of the *Institut Océanographique de Monaco* (2008); Arthur Holmes Medal of the *European Geosciences Union* (2006); Vening-Meinesz Medal of the *European Geophysical Society* (1999); Prize Kodak-Pathé-Landucci of the *French Academy of Sciences* (1996); Prize Doisteau-Blutet of the *French Academy of Sciences* (1979; 1990); Bronze Medal of CNRS (1980).

###### **Civil Awards**

Légion d’Honneur (*Commandeur*, 2018) ; Ordre National du Mérite (*Grand Officier*, 2015).