D[r] Jean BOUGIS – Ingénieur Conseil – 32-34, Chemin du Moulin – 06650 Opio – France
Tél. +33.(0)4.93.77.74.22 – Fax +33.(0)4.93.77.74.25 – Port. +33.(0)6.07.30.70.38
Courriel : Jean.bougis@wanadoo.fr – site : www.scs-ingenierie.com

Cabinet Jean BOUGIS

Senior Consulting Engineer
Expert in Marine Hydrodynamics
and Coastal Engineering

Dr Jean BOUGIS ***CONSULTANT SCIENTIFIQUE*** **34, Chemin du Moulin, 06650 OPIO** **Tél. 04.93.77.74.22 et 06.07.30.70.38** **Fax. 04.93.77.74.25**	Auteur Date Affaire Document Fichier	J. Bougis 20–01–2018 – Plaquette en anglais Plaquette_JB_Anglais-2018-01-20.doc
e–mail : jean.bougis@wanadoo.fr	**Internet : sci-ingenierie.com – j.bougis@scs-ingenierie.com**	

After have been during four years research Engineer at the Naval Hydrodynamics Laboratory of the Ecole Nationale Supérieure de Mécanique of Nantes, Jean Bougis has been Consultant at the private research and development company Principia Recherche Développement S.A. He has held various positions of responsibility in this company before to take the direction of a subsidiary firm founded to develop and to edit computational fluids mechanics software (CFD).

He is become an expert in fluids mechanics and more particularly in naval and marine hydrodynamics (sea keeping of structures, coupled fluids-structures analysis, radiation of submarine structures ...) and in fluvial and coastal engineering (protection of coastline against waves, currants and erosion by sediments transport, protection of harbours and channels…). He has carrying out numerous studies and modelisations (theoretical studies, numerical studies and experimental tests) in the different domains of mechanics.

Without cease to realize himself scientific and technical studies, during this years Jean Bougis has held the management of numerous scientific and technical multidisciplinary projects. Thus, he has acquired the experience of the management of joint-ventures formed to see great multidisciplinary projects through.

I ACTIVITY

1. Field of activity

- Scientific mechanical engineering,
- Naval and marine hydrodynamics,
- Fluvial and maritime hydraulics,
- Coastal engineering and sedimentology,
- Hydraulic engineering,
- Fluids mechanics,
- Coupled fluids-structures analysis,
- Structures analysis and heat transfer analysis,
- Software Engineering and Scientific Computation.

2. Industrial area of activity

- Fluvial and coastal Engineering (previous studies to coastal development, water intake in the sea or waste water outlet, coast and beach protection against wind waves and boat waves…),
- Environment (impact studies, technical studies, pollution, hydraulics and fluids mechanics…),
- Naval and oil industries (sea keeping of structures and ships, hydrodynamics and fluids mechanics…),
- Nuclear industry, chemical industry, transport industry, food-processing industry... (hydrodynamics, fluids mechanics, coupled fluids structures Analysis, heat transfer analysis, tanks and keeping in stocks…),
- Defence and armament industries.

3. Geographical area of activity

- France and European Union,
- Morocco and Tunisia,
- Other countries as the case may be.

4. Prestations

- Expert counsel, Impact studies,
- Carrying out theoretical, numerical and experimental studies,
- Numerical and experimental modelisation, scientific simulation on computer,
- Specifications, instrumentations and following out of experimental tests,
- Analysis of numerical and experimental results,
- Starting and management of research and development projects,
- Management of scientific projects (studies, software's and experimental tests),
- Conception and development or industrialisation of scientific software,
- Support and maintenance of scientific software,
- Scientific and technical teaching.

II MEANS

1. Hardware

Three Personal Computers network permit to carrying out the prestations of scientific computation, of software engineering and the production of reports and documentations.

- PC 1 : Pentium Dual – 3.2 GHz under Windows XP Pro – Secretary and calculus
  RAM memory size of 3 Go – hard disks of 1.2 To
- PC 2 : Xeon – 8 core – 64 bits – 3.2 GHz under Windows XP Pro – Calculus only
  RAM memory size of 12 Go – hard disks of 2.0 To
- PC 3 : Pentium 4 – 3.2 GHz SCSI under Windows 2000 – Dédié sauvegardes
  RAM memory size of 2 Go – hard disks of 72 Go
- PC 4 : Portable ASUS Intel i7 – 2 Core – 64 bits – 2.3 GHz under Windows 7
  RAM memory size of 6 Go – hard disks of static 239 Go
  with HP Deskjet 460 printer

- NETGEAR : 3.6 To – Save data

With in periphery:

– CD and DVD reader and writer
– colour laser printer photocopier Canon C 2025 i (A4 and A3)
– scanner (A4 and A3)
– digital table (A3)

2. Software

To carry out the studies and to write scientific software's, various utilitarian software's run on these computers:

- Fortran 90 compiler without memory limitation (Salford),
- hydrodynamics and mechanics software (Diodore (3D), Poseidon (2D), SWAN...),
- coastal engineering software (wave, harbour shaking, current, solid transport, pollution, anchorage, piles...) (Poseidon),
- computational fluids dynamics software (Navier Stokes) (Algor),
- structural analysis software (Algor),
- thermal analysis software (Algor),
- Sea states generation propagation sofware (SWAN),
- graphic software.

The reports and documentations are written with:

- Microsoft Office (Microsoft Office XP Pro 2010 with Publisher and PDF Pro Office)

3. Partners

To be able to do large studies, relations and partnerships are set up with:

- French and foreign experts,
- public organisations and private research and development firms,
- scientific software firms,
- public organisations and private firms and laboratories of experimental tests,
- Universities.

III MANAGEMENT EXPERIENCE

1. Project management

- Theoretical, numerical and experimental studies of wave attenuation devices for coastline protection against erosion - EUREKA French-Spanish project (Principia - CFEM - Europroject - Ferrovial) (15 MF).
- Development of hydrodynamics software Diodore (Principia - IFP) (8 MF).
- Development of computational fluids mechanics Thétis (6 MF).
- Great Projects of hydrodynamics (PLT Heidrun, Zirku channel) (1,5MF).
- Projects Manager for SGTE Company (Spie Group) for studies of canals and waterways development.

2. Various responsibilities

- Management of an Office with 30 engineers (studies in fluids mechanics, structures analysis, heat transfer analysis, software engineering).
- Conception and tune up of Principia quality assurance system (studies - software - experimental tests).
- Security Agent of Principia R.D. (enabling of PRD to do military projects).
- Conception and management of quality plan of studies for nuclear and oil industries.
- Starting and management of different functions of the firm Diodore Système (technical, commercial, staff, administrative and financial).
- Participation in search of salesmen abroad (England, Norway, Italy, Spain, Greece).
- Senior Consulting Engineer in France and abroad.

IV TECHNICAL EXPERIENCE

In more than thirty five years of experience, numerous studies have been carried out in various fields of the mechanics for various fields of activity of industry and public works (naval and oil industries, nuclear industry, chemical industry, transport industry, food-processing industry, environment, defence and armament industries, fluvial and coastal Engineering).

1. Marine hydrodynamics, hydraulics and in fluids mechanics

- Study of different solutions of hotel platform for South Victoria field production (Gulf of Guinea)
- Study of hydrodynamic pipeline stability under tankers of 270.000 tdw and 356.000 tdw in Zirku terminal departure channel (Abu Dhabi)
- Theoretical study of efficiency of an antipollution ship system
- Computation of forces in the mooring systems of wavemakers
- Hydrodynamics analysis of numerous floating structures (ships, barges, tankers, off shore platforms)
- Expert's report on hydrodynamic analysis about behaviour of the portico barge for Bombay field
- Behaviour of structures under tow (lighthouse of Ouessant)
- Making a catalog of barges and ships RAO hydrodynamic caracteristics
- Behaviour of mooring lines systems for drilling barges in case of lines break
- Minimisation of roll motion of a ship with anti roll tanks
- Determination of the motions and of the wave drift forces for numerous ships
- Hydrodynamic behaviour of a towed side looking sonar system
- Study of various methods to reduce barges and platforms motions
- Definition of hydrodynamics study of PLT platform for Heidrun field (Norway)
- Analysis of pressure and free surface level data measured in oceanic tank of COB
- Study and laying out of a wavemaker for the anti pollution tank of the CEDRE
- Study of standardisation of Seanest product for one or two propeller shaft motor-board and z-drive ships between 6 and 15 meters length
- Bibliography on high speed ships roll and pitch motions stabilisation with active-fins
- Study of sea keeping and mooring of a oil exploitation barge
- Study of hydrodynamic characteristics of cables profiles
- Research of hydrodynamic origin of Citerna 38 and 39 tanker hull vibrations due to keel coolers
- Hydrodynamic study of Ríon-Andírrion (Greece) main bridge pier base at the time of its place in position (towing, sea-keeping, squat, lift, suction …)
- Determination of hydrodynamic loads on water-gate of a wet-dock during the tests of ship screws
- Anchorage study for harbour barge of piers bases prefabrication area of Ríon-Andírrion (Greece) main bridge
- Hydrodynamic behaviour and sea-keeping of a 115 feet sailing or motor catamaran for great pleasure
- Hydrodynamic behaviour and sea-keeping of a 27.5 metres catamaran with hydrojets propulsion
- Hydrodynamic behaviour and sea-keeping of a 90 metres experimentation ship
- Drift forces on the Great Dike of Monaco at zero Froude number at sea
- Study of hydrodynamic behaviour of floating pontoon of Post Station 700 for the transfer of Airbus A 380 in Pauillac
- Numerical study of behaviour of a mooring articulated pile in wave for the extension of Condamine harbour in Monaco
- Feasibility study for towing of the shell protection of Cordouan lighthouse at mouth of Gironde river
- Sizing of mooring components for great pleasure ship in Pierre Canto harbour in Cannes
- Evaluation of boarding keeping of pontoons moored on lines for the French marine in Brest for the accommodation of FREMM
- Feasibility of a barge mooring pontoon for ships supply vessels in the port of Pemba in Mozambique
- Viaduct of the new coastal road in Reunion island: Hydrodynamic Studies and hydrosedimentary for submitting the offer of the VINCI group
- hydrodynamic performance study for the development of the pontoon of the military port of the “Ile Longue” to host submarines
- Study to building tanker mooring CBM (Conventional Buoy Mooring) in Mayotte
- hydrodynamic study and shaking model of the position of the post of a cofferdam on the “Ile Longue”
- Mooring study of a submarine (Tsunami) and frigates FREMM and FDA (wind generated sea) on the pyrotechnic wharf of Toulon

2. Coastal hydrodynamics and harbour engineering

- Studies and analysis of wave attenuation devices for protection of coastal sites
- Theoretical and numerical study of a protection against waves in Dieppe harbour
- Study of comfort and safety conditions of an summer shelter in west of the Issambres harbour
- Study of hydrodynamic behaviour of the ASB 5000 wave attenuation device
- Study of ASB 5000 wave attenuation device location in Dieppe harbour
- Feasibility study of a floating wharf for the fishing port of Nouakchott in Mauritania
- Pre-studies of impacts and preparation of offers for channel and waterways development (New channel and setting to European gauge of old channel)
- Hydrodynamic study of concrete drawing pontoon for "Lorient-Groix" link "Lorient" harbour station.
- Bibliography study of patents about wave-breaker devices.
- Study and modelization of wave agitation of la Baule – le Pouliguen harbour.
- Study and modelization of wave agitation of Sidi Youssef harbour in Tunisia.
- Study of the development of La Turballe harbour (Fishing quay and summer pleasure-boat shelter) with wave agitation modelization.
- Study of use of a barge for the protection against wave of the prefabrication site of piles for the Ríon-Andírrion bridge in Greece.
- Study of wave agitation of La Flotte en Ré harbour for installation of a wave-breaker protection with floating pontoons.
- Study of wave agitation of La Pointe des Galets harbour (Réunion island) for installation of a wave-breaker protection (floating pontoons, ASB, wall).
- Diagnostic study of hydrodynamic origin damages of breakwater of Pyrénées Atlantiques harbours (Biarritz, Guéthary, Saint-Jean de Luz, Socoa and Hendaye) with modelisation of wave approach.
- Study of Saint Jean-de-Luz-Ciboure harbour entrance development with harbour wave agitation model
- Modelization of impact of Gamaritz jetty on agitation in the entrance channel of Biarritz fisherman harbour
- Hydrodynamic study for the replacement of accosting pontoon in the Sauzon harbour : study of the water plane tranquillity amelioration, study of agitation and pontoon sea keeping
- Hydrodynamic study for the replacement of accosting pontoon for the link between Yeu island and the continent in Fromentine
- Hydrodynamic behaviour study of breakwater pontoon of fishing infrastructures in Driasker bay in Port-Louis
- Feasibility study of a accosting post for merchant ships in Port-Camargue - Synthesis of anterior studies
- Hydrodynamic study for the extension of pleasure harbours of Nemours and Nuisement on the Lake of the Der, with agitation modelisation of the two harbours: concourse earned and execution with installation of ASB 3000 attenuators devices and concrete floating breakwaters.
- Physical data and hydrodynamic aspects for the conception of the vedette–boat quays for the departmental harbours of Guadeloupe (7 harbours)
- Study of wave loads and effects on retaining wall of Ríon-Andírrion bridge piers bases during their prefabrication
- Definition study for the reparation of the shore protection of Basse-Terre in Guadeloupe
- Hydrodynamic behaviour study of the floating pontoon of the Ter bay sea course pole in Lorient
- Determination of wave loads on interior works of Sainte-Rose de la Réunion harbour
- Hydrodynamic study for development of Sainte–Rose harbour in Guadeloupe
- Analysis of sea keeping of pebble slope under the Quay n°8 of the Pointe des Galets harbour in the Réunion island
- Harbour oscillations study for development of Essaouira harbour in Morocco
- Optimisation study, then execution study, of South, North–West and North breakwater pontoons for the extension of Sainte Catherine harbour in Locmiquélic
- Harbour oscillations study for the third phases of extension of the commerce harbour Bienvenue-Galisbay of Saint Martin in the Antilles
- Harbour oscillations study for the protection of Marina Fort–Louis of Saint Martin in the Antilles
- Hydrodynamic studies for the creation of the Puerto Bonito Marina in Dominican Republic
- Study of protection against wave of developments of pleasure harbour of Le Moulin–Blanc in Brest
- Study of protection against wave of developments of pleasure harbour of Château in Brest
- Hydrodynamic study of concrete floating breakwaters for the protection of the extension of the wet dock of Piriac sur Mer Harbour
- Practicability Hydrodynamic study for sea keeping of a floating pontoon public welcome on the Loire river in Orléans

- Harbour oscillations estimation and sea keeping evaluation of pontoon for the DTM of Brest
- Hydrodynamic study for the creation of a removable wharf for the Cannes harbour
- Mooring analysis for floating pontoon of north-east dock of pleasure harbour of the Frioul
- Hydrodynamic study of floating breakwaters of the new in-shore pilots station of Marseille harbour
- Hydrodynamic study of floating breakwaters of the extension of Aber Wracc'h harbour
- Hydrodynamic study of floating breakwaters of the extension of Saint-Cast harbour
- Hydrodynamic study of a breakwater screen for Port Camargue harbour
- Hydrodynamic study of floating breakwaters for the pleasure harbour of Z'Abricots pond in Martinique
- Study of hydrodynamic behaviour of breakwater pontoons of Grand Large harbour in Dunkerque
- Study of anchoring of great pleasure ships along Albert Edouard jetty in Cannes
- Evaluation of the risk of aggravation of Nice harbour shaking by Charles Félix dock covering
- Evaluation of hydrodynamic loads for the creation of a Ro-Ro post in Basse-Terre harbour in Guadeloupe
- Evaluation of hydrodynamic loads for the creation of a wharf in Saint-Paul in Réunion island
- Analysis of hydrostatic stability of au concrete pontoon for Port Camargue pleasure harbour
- Shaking study of Ile-Longue harbour in Brest roadstead
- Port-Médoc shaking study – Identification of undesirable phenomena and solutions research
- Reconstruction of quays 7 and 8 for Pointe-à-Pitre harbour authority in Guadeloupe
- Evaluation of hydrodynamic loads for the extension of the l'Île-aux-Marins quay in the Saint–Pierre et Miquelon archipelago
- Hydrodynamic study of a screen breakwater for Toulon–Darse–Vieille pleasure harbour
- Evaluation of hydrodynamic loads on the wharf of Cassis pleasure harbour
- Hydrodynamic study of a wharf with a screen breakwater for Brest Castle pleasure harbour
- Hydrodynamic study of a screen breakwater for Port Servaux pleasure harbour
- Hydrodynamic study (with shaking study) of Gruissan pleasure harbour for the jetty restoration
- Hydrodynamic study for the keeping of EFR floating pontoon of the Île-Longue barrier
- Hydrodynamic study for the use of Kernevel floating breakwaters to protect Keroman harbour
- Contribution to hydraulic and sedimentologic studies for the excavation of Pornichet pleasure harbour
- Analysis of application possibilities of ATAP concept (pneumatic breakwater) in Ajaccio
- Analysis of application possibilities of ATAP concept (pneumatic breakwater) for various localisations of TPM ship-roads in Toulon roadstead
- Hydrodynamic study for the restructuration of the Pornichet pleasure harbour
- Technical assistance for Monaco extension project (examination)
- Feasibility hydrodynamic study for the new pleasure harbour of La-Seyne-sur-Mer (wined examination)
- Analysis of 3D effects of an ATAP limited protection - Application for various localisation in Toulon roadstead
- Analysis of constructive dispositions for the root of the jetty of Grand'Rivière harbour in Martinique
- Assistance for the conception of maritime structures of the new pleasure harbour of Bizerte in Tunisia
- Hydrodynamic study for the construction of the new pontoons of the Barcarin ferry
- Hydrodynamic study for the use of floating pontoons as beakwaters in Port Camargue pleasure harbour
- Conception and realisation hydrodynamic studies of the protection against waves of the new pleasure harbour of La-Seyne-sur-Mer"
- Boarding loads on supply pontoons and wind loads on pleasure pontoons of the new pleasure harbour of La-Seyne-sur-Mer
- Hydrodynamic studies for development of central mole and fishing boats pontoons of Herbaudière harbour (wave propagation, shaking model and sea-keeping of floating breakwater)
- Hydrodynamic study of the dike-box breakwater for the extension of Minimes harbour in La Rochelle
- Hydrodynamic study for the conception and realisation of Roches Noires Marina on Maurice island (wave propagation, shaking model and marina basin seawater exchange)
- Hydrodynamic study for docking pontoon of the tip of Réchauds on Moines island
- Creation of a new pleasure harbour of « la Normandelière » in Brétignolles-sur-Mer – Contribution to hydrodynamic and sediment transport studies for project
- Hydrodynamic studies for the building of boarding post P4 of Calais harbour
- Evaluation of hydrodynamic loads on the protection of car park Bonaparte of Saint-Raphaël
- Definition study on the establishment of a southern outer harbour and of new berths for the extension of Joliette dock in Marseille
- Hydrodynamic study for the rehabilitation of the pontoons of marine station of Saint-Malo

- Expansion of La Rochelle harbor of "Minimes" : Hydrodynamic performance of the north dike against waves and swell
- Hydrodynamic study of floating breakwaters of the creation of Saint-Mandrier harbour
- Study the technical feasibility of a protective structure against the sea to the port of Grand Large, studies agitation and sedimentation
- Diagnosis and develop a program of repair and reinforcement of the protection dikes (hydrodynamic aspects) of harbors in Morocco (Nador, Al Hoceima, Tangiers, Mohammedia, Casablanca, Safi and Agadir)
- Study of sea states for incidents reinforcement dikes to protect the Cala Iris harbor in Morocco
- Hydrodynamic protection for a large pontoon breakwater on Dahlak Island in Eritrea
- Hydrodynamic study for realization of a maritime heavy pontoons (Issouf-Ali dock) in Dzaoudzi on Mayotte island
- Contribution to diagnosis of vibration problems of cylindrical valves of three dams of VNF on the Moselle
- Hydrodynamic study for the creation of a receiving pontoon for pleasure boats in Paimboeuf
- Hydrodynamic study of execution of protective device against waves of the old Cannes harbor
- Assistance to project management for improving the protection of the port of Charpignat on the lake of Bourget (part thin screen structure)
- Hydrodynamic studies for the pontoons of the fire station and waiting for the tug LNG Terminal in the Port of Dunkirk
- Study of a temporary cofferdam to protect the emergency control construction of the dam of Boutillon
- Study of parking positions maintenance vessels offshore wind farm in Saint-Nazaire in the port of La Turballe - Port stirring study - Study of floating pontoons post
- Study of hydrodynamic performance of the breakwaters pontoons and docking pontoons of "Pole marine activities" of St. Mandrier
- Port of Calais 2015: hydrosedimentary, hydrodynamics and expertise for the delivery of the offer of the Bouygues group
- Hydrodynamic studies of the expansion of the Port of Fishermen of Anthy-sur-Léman
- Hydrodynamic studies of seakeeping of a pontoon at Paimboeuf
- hydrodynamic study for the creation of a breakwater pontoons at the port of Pianottoli-Caldarello in Corsica
- Project management assistance to improve the protection of the Port des Issambres against swells
- Study of agitation for the development of the public space of the "Sardinades" in Port-de-Bouc
- Study of agitation and stability of the embankments of the new shipyard at the port of Casablanca
- Study of the impact on the water level of the bridge and temporary structures on the Sanaga River (Cameroun)

3. Intake water pipes and waste water discharge pipes

- Study of impacts of pluvial discharge in La-Grande-Motte harbour on sea water quality of the basin and of outside water.
- Analyse of hydrodynamic conditions for the implantation of the intake of water of Barrou harbour on pond of Thau
- Analyse of hydrodynamic conditions for the implantation of the intake of water of Cerbère.
- Analyse of hydrodynamic conditions for the implantation of the intake of water of Chichoulet harbour (Port-Vendres).
- Mission for definition and supervision of 3D numerical modelization of the Berre pool for the development of Cadière river and the creation of a outlet waste water
- Hydrodynamic study for the realisation of Pardigon pickle outlet in la Croix–Valmer (∅ 0.65m)
- Feasibility study for sea water de-salting for the drinkable water alimentation of Great Agadir: intake of sea water and pickle outlet
- Feasibility study for sea water de-salting for the drinkable water alimentation of Tan-Tan country: intake of sea water and pickle outlet
- Evaluation of hydrodynamics loads on general collector of the section Lenval–Poincaré in Nice (∅ 2m)
- Study of hydrodynamic behaviour of pickle outlet for Millenium chemical factory in Le Havre
- Hydrodynamic study for the realisation of the waste water outlet in Sables d'Olonne
- Hydrodynamic study for intake of sea water and pickle outlet for the aquatic centre of the Tréport and Mers-Les-Bains
- Hydrostatic analysis of different versions of the floating pump-station of GHRIB in Algeria
- Hydrodynamic study for the waste water outlet of the Béal in Fréjus (AVP)

- Hydrodynamic and hydraulic pre-study for the arrangement of waste water outlet project of Saint-Jean Cap Ferrat
- Hydrodynamic study for the intake fresh sea water for electrical plant CyCoFos in Sollac (Fos-sur-Mer)
- Hydrodynamic pre-study for the arrangement of waste water outlet of Ksar-es-Seghir in Morocco
- Study of flow in the water outfall tank for outlet of Rabat in Morocco – Analysis of air bubbles entrainment risk.
- Hydrodynamic study of intake fresh sea water structures and water outlet for new electric plant C Doniambo of SLN ERAMET in Nouméa (New Caledonia)
- Hydrodynamic study of intake fresh sea water structures and water outlet for new electric plant Combigolfe of Electrabel-Suez group (Fos-sur-Mer)
- Preliminary study of intake fresh sea water structures and brine water outlet for desalination plant of Fouka (Algeria)
- Hydrodynamic study for the transfer of petroleum products discharge activity of Saint Joseph wharf in Ricanto centre (Ajaccio)
- Hydrodynamic study for installation of an underwater sea-line for drinking water in Mayotte between the two islands Grande Terre and Petite Terre
- Strategic study on sea water desalination in Morocco – Intake and brine discharge devices
- Feasibility of sea water desalination for drinking water of Tiznit and Sidi Ifni towns (Morocco): intake and brine discharge devices
- Hydrodynamic study of intake and brine discharge devices for flooding sea water desalination in Souss Massa (Morocco)
- Hydrodynamic study for installation of waste water discharge outlet in sea in Saint-Leu (Réunion island)
- Study of solutions to improve the performance of the discharge structure in the sea water for cooling the power plant at Fos Combigolfe
- Contribution to the diagnostic of the seal weir on the Moselle for intake fresh water for cooling the power plant of Blénod
- Hydrodynamic studies of the water intake for the desalination of seawater for irrigation perimeter Chtouka in Morocco
- Hydrodynamic study for the submarine cables laying between Saint-Denis and La Possession in La Réunion Island
- Hydrodynamic study for installation of waste water discharge outlet in sea of Savanna distillery in Saint-André (Réunion island)
- Hydrodynamic study for the design and construction of the extension of the outfall Maritime WWTP la Gaillarde in Roquebrune-sur-Argens (Var)
- Expertise hydrodynamics to solve the problem of "splashing" the main cooling circuit of the power plant of Shoaiba in Saudi Arabia
- Hydrodynamic studies of the water intake for the seawater desalination for the water supply of the city of Laâyoune in Morocco
- Hydrodynamic study for the installation of the outfall effluent from the WWTP St. Louis (Réunion Island)
- Hydrodynamic study for the installation of the outfall effluent from the WWTP Sainte-Suzanne (Réunion Island)
- Sizing Hydrodynamic the drain of dredged material from the port of Pouliguen
- Pre-hydrodynamic study for the water intake of Plomin power plant project in Croatia
- Hydrodynamic study for the installation of the outfall effluent of the WWTP of Bras-Panon in Reunion island
- Hydrodynamic sizing the discharge pipe of dredged material from the port of Pornichet
- Studies for laying submarine cables of the energy recovery field at sea Croisic (SEM-REV) and followed modeling
- Analysis and evaluation of the technical and financial feasibility of 33 sea outfalls within the sanitation master plans in the governorates of Sousse, Mahdia, Sfax, Gabes and Medenine (Tunisia)
- Preliminary studies of the discharge into the sea for the strengthening of the drinking water supply of the cities of Tarfaya, Sidi Ifni and Al Hoceima desalination of sea water (Morocco)
- Seawater intake of Plomin – Design and study of intake head variant (Croatia)
- Extension of the phosphate plant of Jorf Lasfar - Analysis of functioning of events at outlet of header tank (Morocco)
- Hydrodynamics study of seawater intake for desalination plant for irrigation of perimeter of Dakhla (Morocco)

- Hydrodynamics study of the outfall in concrete with steel core for discharges into the sea of rainwater in the context of the extension at sea of Monaco's territory (Monaco)
- Analysis of the operation of events of culvert of the emissaries of the new fishing port of Casablanca (Morocco)
- Hydrodynamic studies for the water intake and the hot water discharge of the Ajaccio power station (Agitation, holding of the catch and discharge structures at sea, discharge plume)
- Sanitation master plans in the governorates of Sousse, Mahdia, Sfax, Gabes, Medenine and Gafsa - APS of the emissaries of Enfidah, Mehdia, Bradaa, Gabes, Djerba and Zarzis (Tunisia)

4. <u>Coastal Engineering – Sediments transport</u>

- Study of wave-breaker devices use against waves and erosion by sediments transport
- Study of impacts of Port-la-Nouvelle barrage demolition on the sea access channel silting up
- Hydrodynamic, aerodynamic and sedimentary study for the protection of the high beach of Narbonne-Plage - Definition of wall profile.
- Hydrodynamic study for the diagnostic and the reparation of the front of sea dike of La Ciotat
- Study for the research of dredged material disposal area in the Morbihan : short term and long term modelization
- Physical data checking for the studies of offshore Aeolian resources of Languedoc-Roussillon
- Expertise mission about fishing sites of Iminouadar, Sidi Boufdaile, Arkount and Angriw (Morocco)
- Expertise mission for the implantation of an offshore wind-mill site in Dunkerque
- Expertise mission in participation in concourse of Couesnon barrage development in order to restore the maritime character of Mont-Saint-Michel
- Modelization for the incidence study of Deauville harbour dredged material disposal in Seine Bay
- Definition study of reparation of the shore protection of Basse-Terre in Guadeloupe
- Hydrodynamic modelization for the protection of the North part of West Tombolo of Giens
- Physical aspects study for the feasibility of a new tourist station at the Plage-Blanche location in Morocco
- Hydrodynamic and sediment transport study for development of an unloading platform in Terre de Haut in the Saintes archipelago in Guadeloupe
- Sediment transport expertise for dragging optimisation of Ras Kebdana and Saïdia harbours in Morocco.
- Study for protection of the R.D. 81 in front of the Ospedale beach in Corse
- Study of hydrodynamic and sedimentary aspects for the implantation of a light station for pleasure-boat and fishing-boat in Saint-Louis of Marie-Galante island
- Study of an artificial surf reef in Bourail Bay in Nouvelle Calédonie
- Practicability hydrodynamic and sediment transport study for the West extension of Cannes harbour
- Analysis of hydrodynamic and sedimentary aspects for the creation of a dry harbour in Taverna
- Hydrodynamic study (with currant modelisation) for water refresh in the Puerto Bonito Marina in Dominican Republic
- Specialized studies for arrangement of the bank of Laussac peninsula on the Sarrans lake in Aveyron
- Impacts analysis of dredging of Saint-Jean-de-Luz / Ciboure harbour access channel
- Hydrodynamic study for installation of artificial reefs in the Prado Bay in Marseille
- Hydrodynamic and sedimentary study for the protection against wave of North coast of Réunion island
- Expertise mission about pertinence and perennially of tank channels in the Moidrey bay – Risk of to have no control over maintenance works and costs
- Study of mooring of mussels support on concrete blocs in the Pertuis Breton
- Expertise mission about pertinence of American dragging of downstream channels of barrage of the Caserne – Risk of insufficient efficacy of the flush
- 3rd phasis of Port 2000 loading dock extension in the harbour of Le-Havre – Impacts study: hydro-sedimentary aspect.
- Guide writing for evaluation of sanitary risk of dragging operations and sediments discharge in sea environment: Comparison between hydro-sedimentary numerical models
- Creation of the pleasure harbour of la Normandelière in Brétignolles sur Mer – Impacts study: hydrodynamic and hydro-sedimentary aspects
- Hydrodynamic and sedimentary study for the protection against waves of west littoral of West harbour in the Pointe-des-Galets in Réunion island
- Documents analysis to evaluate the impacts on currentology of the deroctage of chanel of Port Louis harbour in Guadeloupe island
- Contribution to the drafting of the terms of reference for the protection study of the Kélibia coastline against marine erosion (Tunisia)

- Study for a diagnosis and the definition of positioning strategy marinas de Nantes Métropole - Aspects hydrosedimentary
- Expertise of the rehabilitation project of Monastir Bay (Tunisia)
- Expertise of the project of the opening to the sea of the Punic military port of Carthage (fight against silting from 2006 to 2010) (Tunisia)
- Facilities hydraulic Couesnon dam downstream of the barrage of the Caserne - Study of performance for bank protection works and channels
- Preliminary study definition devices defense against the sea of coast of Ré Island in Charente Maritime Sectors – Marennes – Oléron
- Contribution to prior expertise in hydrodynamic modeling clapages dredging products of the great project of port of Pointe à Pitre in Guadeloupe
- Assistance Project management for hydrodynamic modeling of clapages dredging products of the great project of port of Pointe à Pitre in Guadeloupe
- Diagnostic - analysis and proposed solutions and expertise of the solutions adopted against scour the retaining wall of the Paseo of Bata in Equatorial Guinea
- Analysis of the stability of the beach from Cape Sesselets and Lido ear on lake of Bourget

5. Studies in structural analysis, coupled fluids structures analysis, vibrations and acoustics.

- Hydroelastic behaviour of submarines screwpropellers
- Writing of software components for mooring lines computation
- Coupled fluids structures analysis on the modal basis for the computation of acoustic radiation of an immersed structure
- Analysis and modelisation of the seismic behaviour of storage tanks
- Analysis and modelisation of the seismic behaviour of industrial process tanks
- Analysis of the taking into account of offshore platforms legs bending on the rigid motions (collisions and deformations) during the docking phases
- Numerical simulation of raising and ruin of the Grand Menhir in Locmariaquer in Morbihan
- Writing of software components for piles and ducs d'Albes computation for different soils
- Study of bridge of Rosario-Victoria link on Rio Parana (Argentine) ship collision risk evaluation and protection devices analysis
- Study of piles sheet steel stamping by the pad of attenuation wave device
- Study of hydromechanic behaviour of motorized floating bridge for fluvial crossing and for fluvial and coastal transport of tank
- Theoretical model of impact between an FPSO and a Tanker for the preparation of document "Basis for design: Tanker deflector" of Girassol project
- Aerodynamic and aeroelastic study of sun-shield of the front of new "Centre Culturel et des Expositions" of Monaco
- Modeling of thermal behaviour of human body medical implants

6. Numerical analysis, software engineering for scientific computation

- Writing of Dynatran software (strip theory sea keeping model)
- Writing of Dynaplous software (three dimensional sea keeping numerical model with forward speed in finite and infinite depth)
- Study and conception of hydrodynamic and coupled fluids structures analysis software design (first version of software Diodore)
- Realisation of three dimensional models to compute structures behaviour in wave. (fast software)
- Development of the second version of software Diodore
- Study of a structures analysis software design for to be use in cases of sub structuration
- Industrialisation of software for the computation of hydraulic networks and turbo-machines
- Management and definition of Diodore's third version design
- Studies and writing of various software for national defence
- Adaptation of a personal computer version (DOS) of Diodore software
- Computerisation of production management for perfume factories

7. Experimental tests

- Conception and tune up of a measurements chain in order to determine the polar curve of a flying aircraft (SFIM)
- Tune up of the experimental coastal engineering near shore currants tank of Chatou (EDF) on physical model (1/10e)

- Experimental tests of hulls in towing tank (ENSM)
- Experimental tests of hulls and bodies in wave tank (ENSM)
- Experimental tests of sea keeping in wave of ships and bodies (added drift resistance) (ENSM)
- In situ instrumentation of a wave attenuation device in Barcelone
- Specification and supervision of hydrodynamic experimental and measurement campaigns on various wave attenuation systems (EUREKA project) (Oceanide)
- Specification and supervision of a protection against waves in Dieppe harbour (Sogreah)
- Experimental tune up of a new concept of wave device attenuation : the ASB 5000 (EDF)
- Specification and supervision of towing tank tests of a 115 feet sailing or motor catamaran for great pleasure (ECN- LHN in Nantes)
- Exploitation of measures in situ realised on the Bolmon pool (development of Cadière river)
- Supervision of tests for the creation of artificial surf reef in Bourail Bay in Nouvelle Calédonie (Oceanide FIRST).
- Supervision of an experimental study of sea keeping of dike and talus composed of geotextile tubes (ISITV laboratory)
- Supervision of tests for the creation of artificial surf reef in Bourail Bay in Nouvelle Calédonie (Laboratoire d'Etudes Maritimes of Alger and ACRI-IN Laboratory)
- Tests specifications for study of the towing of shell protection of Cordouan lighthouse in the mouth if Gironde river.
- Specification, supervision and exploitation of tests in channel for the pneumatic breakwater of ATAP concept (ACRI-IN Laboratory)
- Specification, supervision and exploitation of flow tests for water outfall tank for outlet of Rabat in Morocco (Laboratory of Geocean firm)
- Creation of the pleasure harbour of la Normandelière in Brétignolles sur Mer – Specification, supervision and exploitation of wave tank channel tests for optimisation of external rubble-mound structures
- Specification, supervision and exploitation of wave tank channel tests for optimisation of protection against wave with fixed think barrier
- Assistance to owner for the definition and analysis of in-situ tests of ship-generated waves in the harbor of Toulon
- Assistance to owner for the definition and analysis of in-situ tests of the busy harbor of Dunkirk
- Assistance to owner for the preparation and analysis of tests for in-situ piling expertise prior to the hydrodynamic modeling of clapages products dredging large port project
- Assistance to owner for the definition and analysis of in-situ tests of ship-generated waves in the small harbor of Toulon
- Assistance in project management for the processing and analysis of test channel 2D and 3D vessel structures of the new coastal road to the Réunion Island
- Assistance to owner for the definition of tests against breaching dikes protecting the LNG terminal from Dunkerque West
- Protection against port Cannes wave preparation, monitoring and operation of the test channel for development of protection against surge with a wall and a wall Jarlan porous
- Assistance for conception, realization, instrumentation and exploitation of physical models (cross over chamber and header tank) of sea outfall for phosphate plant of Jorf Lasfar in Morocco
- Assistance to project management for the definition, monitoring and operation of impact tests on protective dikes in the Bay of Saint-Jean-de-Luz
- Assistance in business for defining, monitoring and operation of scour pad tests on piles of the viaduct of the new coastal road to the Reunion island
- Council for the design, implementation, instrumentation and exploitation of the physical model for the study of the impact of the Almohade hopper on the Delure rainwater collector in Casablanca (Morocco)
- Council for the design, implementation, instrumentation and exploitation of the physical model for the study of the protection of the city of Casablanca against the floods of Wadi Bouskoura - Physical model of the junction between the Super Collector West and the collector of the Auda (Morocco)

8. <u>Research and development of computational methods</u>

- Theoretical formulation of the behaviour of submarine vehicles
- Theoretical computation of flowing around a vertical missile moving closer to the free surface of sea
- Wave drift motion at zero Froude number, bidimensional study by strip theory
- Three dimensional diffraction radiation with forward speed in finite and infinite depth

- Behaviour of the ocean going pushing tug barge system with rigid or articulated connexions between the two bodies
- Added wave resistance and diffraction radiation with forward speed
- Study and computation of hydrodynamic flowing in stratified fluid
- Development of software components for hydrodynamic statistical computation
- Development of software for the hulls optimisation of axisymmetric penetrometres
- Solution of general problem of diffraction radiation with forward speed and of added wave resistance by a method of bilinear singularities
- Use of a diffraction radiation with forward speed and added wave resistance model to evaluate the slow drift damping
- Simulation numerical model of the low frequencies behaviour of submarines under irregular waves
- Development of wave propagation approach model (pure refraction and parabolised diffraction–refraction models)
- Development of wave propagation and harbour shaking software by a finite elements method
- Numerical simulation of behaviour of floating bodies in harbour based on a mixed method with finite elements and singularities
- Development of asymptotic model of pollution by continue outlet jets (short time model and long time model)
- Development of asymptotic model of pollution by dredged material disposal (short time model and long time model)
- Development of waves propagation approach models with current (pure refraction and parabolised diffraction-refraction models)

9. Technical control

- External control of hydrodynamic and hydrosedimentary studies of the new harbor of Calais 2015
- External control of projects of protection works of the new harbor of Calais 2015
- External control of hydrodynamic and hydrosedimentary studies of extension at sea of the territory of Monaco
- External control of some hydrodynamic and structural studies for the viaduct at sea of the new coastal road to the Réunion island

V CUSTOMERS REFERENCES

ACB – ACH – ACRI – ADI (Morocco) – AEROSPATIALE – AGRO-CONCEPT (Morocco) – ALSTHOM – AMPHORIS – ALSTHOM ATLANTIQUE – ANP (Morocco) – ANTEA – ANVAR – APAL (Tunisia) – ARCADIS – ARMINES – ARTELIA – BASSIN D'ESSAIS DES CARENES DE PARIS – BCEOM/EGIS – BELLINGHAM MARINE – BEST – BIDIM – BONNA SABLA – BOUYGUES TP – BOUYGUES OFFSHORE – BOUYGUES GE (Equatorial Guinea) – BP – BRLi – BUREAU VERITAS – CALB – CARAÏB MOTER – CARI – CASAGEC – CAT – CEA – CEA DAM – CEDRE – CFEM – CHAMBRES DE COMMERCE ET D'INDUSTRIE – CHIRI – CLAROM – CNES – CNIM – COGEMAD – COGITE – COMABAT – COMMUNES – COMMUNAUTES DE COMMUNES – CONOCO – CONSEILS GENERAUX – CONSEILS REGIONAUX – D2M – DCN (BREST, PARIS, TOULON) – DEGAIE S.A. – DEN – DIODORE SYSTEME – DORIS – DPDPM (Morocco) – DRET – DRSID-BREST – DRSID-TOULON – DTAT – DTP – DTP/OI – DUMEZ Morocco – EDF (DER/CHATOU ET DER/CLAMART) – EGIS EAU – EGIS PORTS – EIFFAGE – ELF – EMCC – EMH – EMO – EOLIEN MARITIME – ERAMM – ESPACE ET DEVELOPPEMENT – ETPM – ETPO – FRAGRANCES ESSENTIELLES – FRAMATOME – DGF–SUEZ – GLS – GTM – GUINTOLI – HYDROKARST – IFP – IFREMER – INDRET – INGEROP – IOA – IRCN – ISM-Ingénierie – JEAN NIEL S.A. – JIFMAR – LESV – LITWIN – LPEE (Morocco) – Pascal MARTIN – MATRA ELEC-TRONIQUE – MARC S.A. – CABINET MAURIC – MECATER (Tunisia) – METALU – MINISTERE DE L'INDUSTRIE (FSH/CEP&M) – MINISTERE DE LA RECHERCHE ET DES TECHNOLOGIES – MIRANES (Saudi Arabia) – NAREVA (Morocco) – NEGRI – NORMED – NOVEC (Morocco) – OCP (Morocco) – ONEP (Morocco) – OTH – PASCAL MARTIN – PIRELLI – PORTS AUTONOMES ET GRANDS PORTS MARITIMES – PORT–MEDOC – PORT CAMARGUE – PORT DE GRUISSAN – PORT-DE-BOUC – PORT ECOLOGIC CONCEPT – PORTES DE L'ATLANTIQUE – PROLOG INGENIERIE – PROSAIL – QDVC (Qatar) – QUILLE – RAZEL-BEC – RAZEL CAMEROUN –

RIVOYRE INGENIERIE – SAGEMOR – SAMETOVAR – SAMIDEG – SBM –SCET–SCOM (Morocco) – SEAMAR ENGINEERING – SEBA – SEDCO FOREX – SEMSAMAR – SETOR – SFIM – SGI-ING. (Swiss) – SGN – SGTE – SGTM (Morocco) – SGTPS – SIACI S–H – SODEPORTS – SOFRESID – SOGEA – SOGREAH – SPIE BATIGNOLLES – STCAN – STUCKY – STUDIA – SUD ETUDES – SYNDICATS INTERCOMMUNAUX – TEAM MAROC – TME (Morocco) – TETIS – THOMSON SINTRA – TOTAL (CFP) – TPG – UNC – USSI – VERCHEENNE – VILLE OLYMPIQUE DE BARCELONE (Spain) – VINCI – ZAKUM D.C.

VI TEACHING

- Ecole Nationale Supérieure de Mécanique of Nantes:
  Seminary on naval hydrodynamics, Nantes 1981.
- Ecole Supérieure des Ingénieurs de Marseille:
  Marine hydrodynamics, Marseille from 1984 to 1986.
- Society of Friends of ENSAE and of ENSTA, Stage F03 (fluids mechanics):
  Methods of singularities, Paris from 1990 to 1992.
- Université de Toulon et du Var, Master of marine sciences and technics:
  Simple waves, real waves and sea keeping of structures, Toulon from 1991 to 1993.
- Office Chérifien des Phosphates:
  Seminary on Coastal engineering and ship dynamics, Laâyoun (Morocco) 1994.
- Institut Portuaire du Havre:
  Seminary on Protection from wave shaking – original solutions, Le Havre 1995.
- Câble Pirelli:
  Seminary on Heat transfers modelisation, Sens 1996.
- Université de Toulon et du Var, Engineers Academy ISITV:
  Real waves and sea keeping of structures, Toulon from 1993 to 1997.
- Université de Toulon et du Var, Engineers Academy SeaTech (ex. ISITV):
  Real waves, sea keeping of structures, wave-breaker devices, Toulon since 2016 (1998).
- BRL Ingénierie:
  Coastal engineering seminary, Nîmes 2000.
- Pirelli Câbles et Systèmes :
  Seminary on Heat transfers modelizstion, Angy 2001.
- ETPO:
  Method for a project of floating breakwater, Nantes 2007.
- Bellingham Marine:
  Seminary on the design of floating pontoons anchorages, Sophia Antipolis, 2008.
- Arcadis :
  Introduction to maritime and river hydrodynamics, to coastal engineering and to harbours infrastructures ingineering – Paris, 5-6 May 2010.
- Direction des Ports et du Domaine Public Maritime (DPDPM Morocco) Coastline monitoring technical, Casablanca 30, 31 march and 1st april 2015 (with M. Chagdali).
- Bonna Sabla : Wastewater outfall in sea, October 10 and 11 2016.

VII CURRICULUM VITÆ

1. Civil status

Jean, Patrick, Lucien BOUGIS
Born the second of March 1953 in Alfortville town (94 – Val de Marne).
French nationality.
Married – Three children.

2. Technical specialities

- Mechanics, Electricity,
- Fluids Mechanics,

- Naval and Marine Hydrodynamics,
- Fluvial and coastal Engineering,
- Coupled Fluids Structures Analysis,
- Structures and heat transfers,
- Numerical Analysis,
- Software Engineering,
- Scientific Engineering.

3. Education and Titles

1977 Mechanical Electrical Engineer.
Ecole Spéciale des Travaux Publics du Bâtiment et de l'Industrie.
57 Bd Saint–Germain – 75005 PARIS.

1978 D.E.A. (Speciality Naval Hydrodynamics).
University of Nantes. (E.N.S.M.).
1, rue de la Noë - 44072 NANTES Cedex.

1979 Hydrodynamical Engineer.
Section Spéciale d'Hydrodynamique Navale Avancée.
Ecole Nationale Supérieure de Mécanique of Nantes. (E.N.S.M.).
1, rue de la Noë - 44072 NANTES Cedex.

1980 Doctor in Mechanics.
(Speciality Marine Hydrodynamics).
University of Nantes. (E.N.S.M.).
1, rue de la Noë - 44072 NANTES Cedex.

2001 Certificate of formation to the expertise, arbitrage, mediation and conciliation
Institut de l'Expertise
17, Rue de la Baume - 75008 Paris

4. Responsibilities practised

1978 - 1981 Ecole Nationale Supérieure de Mécanique (E.N.S.M.).

09/78 12/81	Research Engineer.

1982 - 1991 Principia Recherche Développement (P.R.D.).

01/82 05/86	Research and Project Engineer in Mechanics.
06/86 12/87	Hydrodynamics Software Department Manager.
01/88 03/89	Software Division Manager. (Hydrodynamics, Structural Analysis and Software Engineering).
04/89 12/91	Manager of Cannes Office. (Hydrodynamics, Structural and Thermal Analysis, Software Engineering and Computational Fluids Dynamics).

1991 - 1992 DIODORE Système (D.S.) subsidiary of P.R.D.

01/92 01/93	Deputy General Manager.

Since 1993 Senior Consulting Engineer and Scientific Adviser.

since 02/93	Scientific Mechanical Engineering, Fluids Mechanics - Structural analysis - Heat Transfer Analysis, Coastal Engineering, Naval and Marine Hydrodynamics, Software Engineering and Numerical Analysis.

VIII PUBLICATIONS

1. Articles in scientific journals

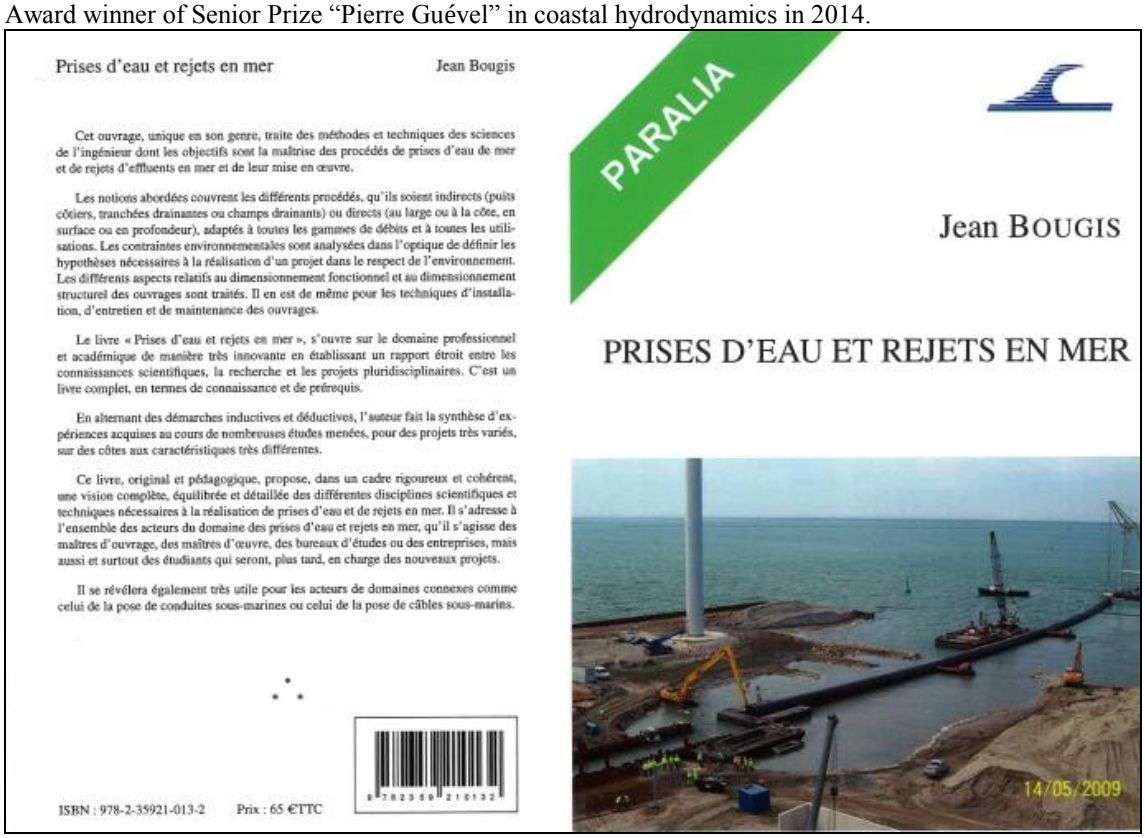
1. Action de la houle sur un flotteur élancé à Froude zéro en profondeur finie, ATMA, Paris 1979. (with A. Clément).
2. Formulation du problème des oscillations des corps flottants animés d'une vitesse de route moyenne constante et sollicités par la houle, 4ème Congrès Français de Mécanique, Nancy 1979. (with P. Guével, D.C. Hong).

3. Etude de la diffraction–radiation dans le cas d'un flotteur indéformable animé d'une vitesse moyenne constante et sollicité par une houle sinusoïdale de faible amplitude, Thèse de Doctorat, Nantes 1980.
4. Forces and moments in the rigid connections between a barge and its tug with forward speed in wave, Third International Conference on Numerical Ship Hydrodynamics, Paris 1981. (with P. Vallier).
5. Ship notions with forward speed in infinite depth, Shipbuilding Progress, Vol. 29 N° 332 – 1982. (with P. Guével).
6. Méthode rapide de calcul des efforts dus à la diffraction–radiation de la houle sur des structures entièrement immergées, ATMA, Paris 1982. (with P. Guével, G. Delhommeau, J.C. Daubisse).
7. Calcul de surenfoncement des navires animés d'une vitesse de route, ATMA, Paris 1984.
8. Méthode tridimensionnelle de calcul de la résistance ajoutée d'un navire sur houle, ATMA, Paris 1985. (with P. Guével).
9. Application de la Théorie des Groupes de Symétries aux problèmes d'hydrodynamique et de couplage Fluide Structure, Premières Journées de l'Hydrodynamique, Nantes 1987.
10. Alternative Methods for the Numerical Analysis of Response of Semi submersible Platforms in waves, OMAE, Houston 1987. (with C. Berhault, B. Molin, P. Guével, E. Landel et E. Sorasio).
11. Contribution à l'étude des effets de carènes liquides, II^{èmes} Journées Hydrodynamiques, Nantes 1989. (with P. Guével, E. Sorasio, F. Scerri, A. Cariou).
12. Nouveaux concepts d'ouvrages côtiers face à la réglementation sur la protection du littoral, Symposium "Littoral 90" Association Eurocast, Marseille 1990. (with J.F. Coudert et E. Landel).
13. Méthodes rapides de calcul des fonctions de Green des problèmes de Neumann–Kelvin et de diffraction–radiation with vitesse d'avance, III^{èmes} Journées de l'Hydrodynamique, Grenoble 1991. (with T. Coudray).
14. An original application of Oracle RDBMS as a data control tool for the computational fluid dynamics software Diodore, 9th European Oracle User Conference, Cannes 1992. (with E. Sorasio et C.Thomas Milles).
15. Diodore: a numerical tool for frequency and time domain analysis of the behaviour of moored or towed floating structures, CADMO 92, Madrid October 1992. (with C. Berhault, Ph. Lebuhan, B. Molin).
16. L'ASB–5000 : un nouveau concept d'atténuateurs de houles, Cités Marines '95, Monaco Novembre 1995. (with A. Degaie).
17. Modélisation numérique du comportement d'atténuateurs de houle flottants sur un site côtier, IV^{èmes} Journées Nationales de Génie Côtier et de Génie Civil – Dinard Avril 1996. (with A. Degaie).
18. Modélisation du clapage de déblais de dragage en milieu marin, VII^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Anglet Mai 2002. (with P. Farnole).
19. Diagnostic des ouvrages portuaires du département des Pyrénées Atlantiques, VII^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Anglet Mai 2002. (with J.M. Beynet, A. Jouandet et A. Roudil).
20. Protection du littoral contre l'érosion marine : Exemple du tombolo de Giens, VII^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Anglet Mai 2002. (with P. Farnole, M. Ritondale et D. Barbarroux).
21. Protection de sites portuaires par des ouvrages flottants en béton, VIII^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Compiègne Septembre 2004. (with Y. Renoul).
22. Modèle d'approche de la houle par une méthode de réfraction–diffraction en coordonnées curvilignes, VIII^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Compiègne Septembre 2004.
23. Protection originale du port de Nuisement sur le lac du Der, VIII^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Compiègne Septembre 2004. (with J.-M. Beynet, T. Cherrière, M. Chignoli and A. Degaie).
24. Protection du chenal d'accès à la marina Puerto Bonito en République Dominicaine, VIII^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Compiègne Septembre 2004. (with J.-M. Beynet, F. Carnus and P. Fehlmann).
25. Protection côtière par tubes filtre conteneurs : cas de la plage de l'«Amélie», VIII^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Compiègne Septembre 2004. (with O. Artières, M. Dunand, F. Durand and P. Vassal).
26. Etude d'un récif Artificiel de Surf *(Nouvelle Calédonie)*, IX^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Brest Septembre 2006. (with R. Bonnefille, M. Allenbach and D. Lajoie).
27. Non-linearities and Coupling Effects on Floating Breakwaters Eigenvalues, Proc. IUTAM Symposium on fluid-structure interaction in ocean engineering, TUHH Hamburg, Germany, July 23-26, 2007, pp.1-12.

28. Etude des phénomènes de réfraction et de diffraction avec un modèle d'approche de la houle en coordonnées curvilignes, X^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Sophia Antipolis 14-16 Octobre 2008, pp. 355-364. (with N. Jarry, D. Lajoie et V. Rey).
29. Processus de développement d'un débarcadère auto–protégé contre la houle par un brise-lames pneumatique, X^{èmes} Journées Nationales de Génie Côtier et de Génie Civil, Sophia Antipolis 14-16 Octobre 2008, pp. 687-697. (with J.-M. Beynet).
30. Aspects maritimes du dessalement d'eau de mer, 7ème Rencontre Hydrodynamique Marine, Casablanca 25-26 Novembre 2010.
31. Aspects maritimes du dessalement d'eau de mer, II^{ème} Conférence Méditerranéenne Côtière et Maritime, pp. 267- 278, Tanger 22-24 Novembre 2011.
32. Répartition de vitesse à l'entrée des tours de captage d'eau de mer, II^{ème} Conférence Méditerranéenne Côtière et Maritime, pp.279-282, Tanger 22-24 Novembre 2011.
33. Revue des aspects maritimes du dessalement d'eau de mer, Revue Paralia, Vol. 6, pp.1.1-1.13, 2013.
34. Conception d'un atténuateur de houle de type caisson à double parois poreuses, XIII^{es} Journées Nationales de Génie Côtier et de Génie Civil, Dunkerque 2-4 juillet 2014, pp. 649-658. (with D. Lajoie et J. Dolidon).
35. Extrapolation d'essais d'impacts de la houle sur modèles réduits, XIV^{es} Journées Nationales de Génie Côtier et de Génie Civil, Toulon 29 juin – 1er juillet 2016, pp. 333-342. (with S. Bernard, C. Cayrol, N. Garcia, F. Jocou, D. Rihouey, A., C. Vergnet).
36. Méthode et outils pour la modélisation de la dilution des rejets d'usine de dessalement d'eau de mer, 8^{e} Rencontres Internationales d'Hydrodynamique Marine, Casablanca (Maroc) – 27 et 28 octobre 2016, 12 p.
37. Extrapolation d'essais sur modèle réduits en similitude restreinte ou partielle au moyen de plusieurs échelles, 15^{e} Journées de l'Hydrodynamique, Brest – 22 au 24 novembre 2016, 12 p.
38. Approche globale des rejets en mer : usines de dessalement, centrales thermiques et assainissement, 4th Coastal and Maritime Mediterranean Conference, Split (Croatia) – November 29 to December 01 2017, 6 p.

2. Book

Prises d'eau et rejets en mer, 624 p., Nantes : Paralia, 2014.
Award winner of Senior Prize "Pierre Guével" in coastal hydrodynamics in 2014.



IX PATENTS

- Wave attenuation device, 1995. (with A. Degaie).
- Hydraulic currants reduce device, 1995. (with H. Françon) (retired).

Made in Opio town on January, 20th 2018

Dr Jean BOUGIS
CONSULTANT SCIENTIFIQUE
34, Chemin du Moulin
06650 OPIO Port : 06 07 30 70 38
Tél: 04 93 77 74 22 Fax: 04 93 77 74 25

Jean Bougis