# Ms. Caroline TOLLA

## CIVIL STATE

Date of birth	26 January 1980, 25 years old
Place of birth	Marseille
Nationality	French
Personal address	Chemin Gramenoue, Route des 4 saisons
Phone number	0033-06.62.68.86.48.
Professional situation	3 <sup>rd</sup> year Ph D, government grant (MENRT)
Period	October 2002 - December 2005
Professional address	Laboratory of Microbiology Geochemistry and Marine Ecology (LMGEM) Campus de Luminy Case 901 13288 MARSEILLE Cedex 09
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# FORMATION & COMPETENCES

2002-2005	Ph D at the Oceanology Centre of Marseille, at the Laboratory of Microbiology Geochemistry and Marine Ecology: Dynamical modelling of bacterial communities and their interaction with the organic matter, in marine sediments. Other Key Words: enzymatic kinetics, Synthesis units, DEB theory, nitrogen cycle Collaborations: Pr. Jean-Christophe POGGIALE, Dr. Pierre AUGER and Pr. Sebaastian KOOIJMAN.
2001-2002	<ul> <li>Postgraduate certificate in Marine Environmental Sciences, Option Stochastic Methods of processes analysis:</li> <li>Research project: interaction between macrobenthic and microbial communities in marine sediments and study of these consequences on the organic matter fate; a modelling approach.</li> <li>Formation: deterministic modelling of spatial – temporal processes, marine ecology modelling, multivariate statistical methods, discriminant analysis methods, analysis of random processes</li> </ul>
1997-2001	University degree, Master in Environmental Sciences, Option physical oceanology: Generalist formation in the main following field: computing, numerical analysis, coastal circulation and modelling, Ecological processes of marine environment, mathematical modelling of marine ecology, statistical analysis of temporal processes
Languages Computer science	English & Spanish (read-write-speak). Fortran, Matlab, ADE-4, Mathematica, Corel Draw, Octave Linux, Windows environments and Office tools.

• International conferences

#### Oral presentations

**Tolla C., Poggiale J.C., Kooijman S.A.L.M.** (2005/03/15-16). A new inhibition mathematical formulation. Doctoral School of Environmental Sciences Congress at "l'Agora des Sciences" (Marseille) (the best oral prize).

**Tolla C., Poggiale J.C., Kooijman S.A.L.M.** (2004/09/3-4). A new mathematical inhibition formulation of the preferential use of a substrate on another, based on enzymatic kinetics. Symposium in Amsterdam at the department of Theoretical Biology : « Theories and Methods in Nonlinear Population Dynamics : Aggregation-, Dynamic Energy Budget-, Game- and Adaptative Dynamics theory, Perturbation Methods and Deterministic and Stochastic Modelling ».

**Tolla C., Poggiale J.C., Kooijman S.A.L.M., Bonin P., Auger P.** (2004/05/21-25). Interaction modelling between organic matter and bacterial communities in the marine sediment. International conference of Theoretical Biology in Marrakech organised by the FSTB (Francophone Society of Theoretical Biology) (the best oral prize).

#### Poster presentations

**Tolla C., Poggiale J.C., Kooijman S.A.L.M., Gilbert F., Stora G.** (2004/11/7-9). Microbial communities and organic matter interactions in an environment submitted to a bioturbation activity: a modelling approach. 1<sup>rst</sup> Nereis Park Conference in carry le Rouet (France): « Bioturbation: the ever changing seafloor ».

**Tolla C., Poggiale J.C., Kooijman S.A.L.M.** (2004/03/24-25). Interaction between microorganisms and organic matter in sediments: a modelling approach. Doctoral School of Environmental Sciences Congress at "l'Agora des Sciences" (Marseille).

Publications

**Mermillot-Blondin F., Auger P., Poggiale J.C.,** <u>Tolla C.</u>, **Creuzé des Châtelliers M.** Modelling the impact of Tubifididae (Oligochaeta) on oxygen concentrations in hyporheic sediments: importance of vertical distributions. (In prep).

Talin F., <u>Tolla C.</u>, Rabouille C., Poggiale J.C. (2003). Relations between bacterial biomass and carbon cycle in marine sediments: an early diagenetic model. *Acta Biotheoretica*, 51: 295-315.

<u>Tolla C.</u>, **Poggiale J.C.**, **Kooijman S.A.L.M.** A new mathematical inhibition formulation based on enzymatic kinetics, applied to the preferential use of reserve vs. structure in maintenance process. (In prep).

## TEACHING

<ul> <li>2003/2004</li> <li>Degree 1<sup>st</sup> year</li> </ul>	tutorial class for the section Life Sciences (21h).
Secondary school level	lessons in math/physic (10h).
<ul><li>2004/2005</li></ul>	
Master 1	class of « Modelling of the organic matter degradation » (4h).
Degree 1, 2, 3	practical of « Pollution » (16h).

Co-supervision of students (2) with J.C. POGGIALE
 3<sup>rd</sup> Degree: « Modelling initiation and familiarisation with the software Matlab ».
 Postgraduate: « bacterial degradation modelling in the pelagic column. Classical models application to biodegradation data about COD ». (Currently PhD).

#### SEA EXPERIENCE

- 2002-2005: Several scientific cruises in the "Berre pond" (near Marseille), in order to collect sediment samples, to further characterise benthic assemblages and quantify bioturbation processes.
- 2000/09: Contribution to the oceanographic project concerning the "thonaille" fishing technique (Oceanology Centre of Marseille). Over a span of two months, several scientific cruises have been realised in the Golf of Lions and consisted in keeping watch on the species and the quantities captured and more precisely on protected species.
- 2000/06: In situ investigation on board the « Louis Françoise 2 » ship (seine tuna boat from Sète port), during 20 days, in order to realise a presentation of the tuna and turning seine fishing technique in Mediterranean Sea.

# **EXTRA-INFORMATIONS**

Sports:	Diving (P2 FFESSM), sailing, climbing.
Trips:	Venezuela (5 stays), England, Spain, Sicily, Tunisia, Portugal, etc.
Music:	Saxophone.
Certificate:	Driver's licence and boat licence, certificate of first Aid (AFPS).