

List of oral presentations by session

Monday 20 April, 2009

(conference room 'Lucien Laubier', Ifremer centre, Technopôle Brest Iroise, Plouzané)

09.00 - 09.25 Introduction: **José-Luis Zambonino** (Ifremer)
M. Alunno-Bruscia (Ifremer) & **Frédéric Jean** (UBO-IUEM)

Session 1. Introduction: general theory, formal aspects of DEB theory
Keynote speaker: Prof. Tiago DOMINGOS

Chairmen: J.-C. Poggiale & E. Rannou

09.25 **Domingos, T.*** Dynamic Energy Budget Theory: reaching consilience between the physical and the biological sciences through an axiomatic theory for metabolism.

10.10 **Fernandes, J.***, **Sousa, T.**, **Domingos, T.**, **Kooijman, S.A.L.M.** Scaling laws for entropy production within and across species: a mechanistic approach.

10.30 – 11.00 *Coffee break*

11.00 **Marques, G.M.***, **Sousa, T.**, **Domingos, T.**, **Kooijman, S.A.L.M.** Life engine – Construction of a DEB module for videogames.

11.20 **Klanjscek, T.***, **Nisbet, R.M.** DEB models with physiologically transparent state variables.

Session 2. Perturbations studies, (eco)toxicity
Keynote speaker: Dr. Tjalling JAGER

Chairwomen: . V. Loizeau & V. Ducrot

11.40 **Jager, T.*** What toxicants can teach us about metabolic organisation?

12.25 **Péry, A.***, **Ducrot, V.** DEBtox models as a basis for population toxicological risk assessment.

12.45 – 14.20 *Lunch*

14.20 **Alonzo, F.***, **Massarin, S.**, **Gilbin, R.**, **Garnier-Laplace, J.** Modelling population responses of freshwater invertebrates to radionuclides with different toxic effects on organisms.

14.40 **Bodiguel, X.***, **Maury, O.**, **Mellon-Duval, C.**, **Rouspard, F.**, **Le Guellec, A.-M.**, **Loizeau, V.** A dynamic and mechanistic model of PCB bio-accumulation in the European hake (*Merluccius merluccius*).

15.00 **Eichinger, M.***, **Bacher, C.**, **Bégout, M.-L.**, **Loizeau, V.** Bioaccumulation of organic contaminant in the common sole (*Solea solea*): an investigation coupling experimentation, *in situ* sampling and modelling.

15.20 – 16.20 *Coffee break & poster sessions*

Chairwomen: . V. Loizeau & M. Eichinger

16.20 **Zalvidar-Comenges, J.M.*** Towards the implementation of a DEB mussel model for B and vB screening of new chemicals.

16.40 **Lopes, C.**, **Teixeira Alves, M.***, **Billoir, E.**, **Garric, J.**, **Charles, S.** A combination of DEBtox and Leslie models to quantify ivermectin impacts on cladoceran species.

17.00 **Ducrot, V.***, **Péry, A.** Extrapolation of chronic effects of toxicants based on short-term test data using DEBtox models.

18.00-19.15 *Welcome aperitif*

Tuesday 21 April 2009

(conference room 'Lucien Laubier', Ifremer centre, Technopôle Brest Iroise, Plouzané)

Session 3. Eco-physiology: the individual level

Keynote speaker: Dr. Stéphane POUVREAU

Chair-woman/man: M. Alunno-Bruscia & J. Flye Sainte Marie

09.00 **Pouvreau, S.*** What the Dynamic Energy Budget theory can tell us about the filter feeders eco-physiology?

09.45 **Rannou, E.*** Discovering and learning DEB theory through the Growth DEB equation.

10.05 **Fablet, R.*, Pecquerie, L., Hoie, H., Jolivet, A., Millner, R., Mosegaard, H., Kooijman, S.A.L.M., De Pontual, H.** A DEB-based framework for analyzing individual life traits recorded by fish otoliths.

10.25 **Pecquerie, L.*, Nisbet, R., Fablet, R., Kooijman, S.A.L.M.** Dynamics of stable isotopes in fluctuating environments.

10.45 – 11.30 *Coffee break*

11.30 **van der Meer, J.*, Camphuysen, K.** Differentiated growth of organs in gulls.

11.50 **van der Veer, H.*, Cardoso, J.F.M.F, Peck, M.A., Kooijman, S.A.L.M.** Physiological performance of plaice *Pleuronectes platessa* (L.): from Static to Dynamic Energy Budgets.

12.10 **Campeas, A.*, Chatain, B., Millot, S., Di-Poi, C., Lemarié, G., Person, J., Bégout, M.-L., Alunno-Bruscia, M.** Bio-energetic modelling of growth of the European sea bass in aquaculture, based on Dynamic Energy Budget theory.

12.30 **Eichinger, M.*, Kooijman, S.A.L.M., Sempéré, R., Lefèvre, D., Grégori, G., Charrière, B., Poggiale, J.-C.** DOC consumption and release by marine bacteria in transient environment: from experiments to modeling.

12.50 – 14.20 *Lunch*

Chair-woman/man: L. Pecquerie & F. Jean

14.20 **Emmery, A.*, Jean, F., Flye Sainte-Marie, J., Chauvaud, L., Paulet, Y.-M., Pouvreau, S.** Interannual variability of individual growth of the great scallop *Pecten maximus*.

14.40 **Ren, J.*** Choice of food quantifiers in shellfish modelling.

15.00 **Saraiva, S.***, **van der Meer, J.**, **Kooijman, S.A.L.M.**, **Sousa, T.** The effect of food composition on feeding, growth and reproduction of bivalves.

15.20 **Bourlès, Y.**, **Maurer, D.**, **Le Moine, O.**, **Geairon, P.**, **Mazurié, J.**, **Gangnery, A.**, **Alunno-Bruscia*, M.**, **Pouvreau, S.** Modelling growth and reproduction of the Pacific oyster *Crassostrea gigas*: application of the oyster-DEB model to various shellfish areas in France.

15.40-16.50 *Coffee break & poster sessions*

20.00-23.30 Visit of the Oceanopolis aquarium and banquet dinner.

Wednesday 22 April 2009

(conference room 'Lucien Laubier', Ifremer centre, Technopôle Brest Iroise, Plouzané)

Session 4. Population, ecosystem, evolutionary aspects
Keynote speaker: Prof. Roger M. NISBET

Chairmen: S.A.L.M. Kooijman & P. Pondaven

09.00 **Nisbet, R.M.*** Dynamic Energy Budget theory and ecology; learning from *Daphnia*.

09.45 **Mateus, M.*, Domingos, T., Kooijman, S.A.L.M., Baretta, J.** Reaching consensus between marine ecological models and metabolic theories in ecology.

10.05 **Muller, E.*, Kooijman, S.A.L.M., Edmunds, P.J., Doyle, F.J., Nisbet, R.M.** Dynamic energy budgets in syntrophic symbiotic relationships between heterotrophic hosts and photoautotrophic symbionts.

10.25 **Poggiale, J.-C.*, Baklouti, M., Quéguiner, B.** Mechanistic formulations of kinetics absorption with multi-limitation - Consequences on community dynamics.

10.45 - 11.30 *Coffee break*

11.30 **Maury, O.*, Poggiale, J.-C.** A DEB-based model of marine ecosystem size-spectrum with life history diversity.

11.50 **Clark, J.*, Williams, H.** An adaptative model of marine biochemistry in the Archaean.

12.10 **Lorena, A.*, Marques, G.M., Sousa, T., Kooijman, S.A.L.M.** Modelling microalgal growth with DEB theory.

12.30 **Struski, C.*, Pecquerie, L., Petitgas, P., Huret, M.** Potential spawning of anchovy in the Bay of Biscay: use of a bio-energetic model with an environmental long time-series.

12.50-14.00 *Lunch*

Chairmen: C. Bacher & O. Maury

14.00 **Maar, M.*, Bolding, K., Petersen, J.K., Hansen, J.L.S, Timmermann, K.** Local effects of blue mussels around turbine foundations in an ecosystem model of Nysted off-shore wind farm, Denmark.

14.20 **Grangeré, K.*, Cugier, P., Lefebvre, S., Bacher, C., Ménesguen, A., Pouvreau, S.** Modelling the ecophysiological response of the Pacific oyster *Crassostrea gigas* to the spatial variability in environmental factors: application to the Baie des Veys ecosystem.

14.40 **Boukal, D.*, Laugen, A., Dieckman, U., Ernande, B.** DEB model of the growth of Pacific oysters in the Marennes-Oléron Bay: implications of life cycle closure and density-dependent feedback.

15.00 **Wijsman, J.W.M.***, **Troost, T.A.**, **Brummelhuis, E.**, **Smaal, A.C.** A Dynamic Energy Budget model for cockles in the Oosterschelde.

15.20-15.50 *Coffee break*

15.50 **S.A.L.M. Koojman** : CONCLUSIONS of the 1st international DEB symposium

List of posters by session

(hall of the conference room 'Lucien Laubier', Ifremer centre, Technopôle Brest Iroise, Plouzané)

Session 1.

Mateus, M.*, Domingos, T., **Mateus, S.** Current problems in stoichiometric ecology: a unified approach.

Rannou, E.*, **Eichinger, M.** The DEB growth equation: a new approach for estimating the DEB parameter values for the common sole (*Solea solea*).

Session 2.

Augustine, S.*, **Gagnaire, B.**, **Alonzo, F.**, **Poggiale, J.-C.**, **Gilbin, R.**, **Simon, O.**, **Adam-Guillermin, C.** Effects of uranium on zebrafish, *Danio rerio*: relationships between biomarkers and history life traits using a Dynamic Energy Budget model.

Dutilleul, M.*, **Massarin, S.**, **Alonzo, F.**, **Poggiale, J.-C.** Effects of uranium on carbon assimilation and energy budget of *Daphnia magna*.

Session 3.

Emmery, A.*, **Lefebvre, S.**, **Alunno-Bruscia, M.**, **Kooijman, S.A.L.M.** Modeling isotopes dynamics in soft tissues of *Crassostrea gigas* in the context of DEB theory to study the trophic ecology of oysters at large spatial scale.

Hoefnagel, N.*, **van der Meer, J.** Parameter estimation for the shore crab.

Martins, I.*, **Colaço, A.**, **Riou, V.** Uncertainty analysis and validation of a C-flux model of the Atlantic vent mussel *Bathymodiolus azoricus* and its endosymbionts.

Rico-Villa, B.*, **Bernard, I.**, **Pouvreau, S.**, **Robert, R.** Dynamic Energy Budget (DEB) growth model for *Crassostrea gigas* larvae.

Thomas, Y.*, **Pouvreau, S.**, **Garen, P.** Application of a DEB model to the pearl oyster (*Pinctada margaritifera*) larvae.

van Oevelen, D.*, **Larsson, A.**, **Pruser, A.** Development of a DEB model of the coldwater coral *Lophelia pertusa* for the quantification of sedimentation stress.

Session 4.

Eynaud, Y.*, **Nisbet, R.**, **Muller, E.** Effect of photoinhibition and photodamage on the stability of syntrophic symbiotic relationships in scleractinian corals.

Frisk, C.*, Andersen, K.H., Kraus, G. Bioenergetic, life-history modelling of sprat (*Sprattus sprattus*) in the Baltic Sea and the North Sea.

Gangnery, A.*, Bacher, C., Grangeré, K., Pouvreau, S. Assessing trophic carrying capacity of the Baie des Veys (Normandy, France) with a biological model.

Rosland, R.*, Strand, Ø., Bacher, C., Aure, J., Strohmeier, T. Applying DEB model to simulate mussel growth variability in long-line farms as a function of stocking density and farm design.