

Part I : Publications of the S users

Part II: Papers to make a reference to the S model

The image shows a screenshot of a Facebook page for a group named "S Users". The page is viewed from the perspective of a user who is a member of the group. The top navigation bar is blue and contains the Facebook logo, a search bar, and a small profile picture of the user. The left sidebar is white and contains navigation options: "FAVOURITES" (Welcome, News Feed, Messages, Events, Find friends, Toulouse Area) and "GROUPS" (S Users, S Login, Marine seawater contamin..., S Comodo, S Team, New Group...). Under "GROUPS", "S Users" is highlighted. Below "GROUPS" are "LISTS" (Close friends) and "APPS" (Photos, Music). The main content area is white and shows the group's profile picture (a large 'S' on a globe), the name "S Users", and the status "Closed group" with "15 members", "1 Photo", and "8 Docs". Below the profile information are three action buttons: "Write post", "Add photo/video", and "Ask question". A text input field with the placeholder "Write something..." is positioned below these buttons. The feed contains two posts from "Sirocco Oceanography". The first post is a text-based announcement: "The numerical mode is better filtered if an even value is chosen for the K2DFIN parameter in notebook_time", dated Thursday at 09:25 near Toulouse. The second post is a link to a ScienceDirect article titled "ScienceDirect - Ocean Modelling : Alternatives to the Robert-Asselin filter", dated Thursday at 09:24 near Toulouse. The article snippet discusses the Leap Frog time stepping scheme and the Robert-Asselin filter.

Part I: 63 Publications of the S users

Marsaleix P., Auclair F., Estournel C., Nguyen C., Ulses C., 2012. Alternatives to the Robert-Asselin filter. *Ocean Modelling*, 41, 53-66 <http://dx.doi.org/10.1016/j.ocemod.2011.11.002>

Michaud H., Marsaleix P., Leredde Y., Estournel C., Bourrin F., Lyard F., Mayet C., Ardhuin F., 2011. Three-dimensional modelling of wave-induced current from the surf zone to the inner shelf. *Ocean Sci. Discuss.*, 8, 2417-2478, <http://dx.doi.org/10.5194/osd-8-2417-2011>

Hu Z. Y., Petrenko A. A., Doglioli A. M., Dekeyser I., 2011. Numerical study of eddy generation in the western part of the Gulf of Lion. *Journal of Geophysical Research*, vol 116, C12030, doi:10.1029/2011JC007074

-60-

Marsaleix P., Auclair F., Estournel C., Nguyen C., Ulses C., 2011. An accurate implementation of the compressibility terms in the equation of state in a low order pressure gradient scheme for sigma coordinate ocean models. *Ocean Modelling*, 40, 1-13 <http://dx.doi.org/10.1016/j.ocemod.2011.07.004>

Herbert G., N. Ayoub, P. Marsaleix and F. Lyard, 2011. Signature of the coastal circulation variability in altimetric data in the southern Bay of Biscay during winter and fall 2004, *J. Mar. Syst.*, doi: 10.1016/j.jmarsys.2011.03.004

Floor J.W., Auclair F., Marsaleix P., 2011, Energy transfers in internal tide generation, propagation and dissipation in the deep ocean, *Ocean Modelling*, 38, 22-40 <http://dx.doi.org/10.1016/j.ocemod.2011.01.009>

Auclair F., Estournel C., Floor J. W., Herrmann M., Nguyen C., Marsaleix P., 2011. A non-hydrostatic algorithm for free-surface ocean modelling, *Ocean Modelling*, 36, 49-70 <http://dx.doi.org/10.1016/j.ocemod.2010.09.006>

Gerigny O., Di Martino B., Romano J.-C., Ulses C., 2011. A one-year (2005) comparison of seawater temperature series between in situ and modelling data: Application to the Strait of Bonifacio (South Corsica) *Comptes Rendus Geoscience*, 343, pp 278-283, <http://dx.doi.org/10.1016/j.crte.2011.01.002>

Auger P.A., Diaz F., Ulses C., Estournel C., Neveux J., Joux F., Pujo-Pay M., and J. J. Naudin J.J., 2011. Functioning of the planktonic ecosystem of the Rhone River plume (NW Mediterranean) during spring and its impact on the carbon export: a field data and 3-D modelling combined approach. *Biogeosciences*, 8, 3231-3261. <http://dx.doi.org/10.5194/bg-8-3231-2011>

Fontana C., Grenz C., Pinazo C., 2010. Sequential assimilation of a year-long time-series of SeaWiFS chlorophyll data into a 3D biogeochemical model on the French Mediterranean coast. *Continental Shelf Research*, 30, 1761-1771. <http://dx.doi.org/10.1016/j.csr.2010.08.003>

Qiu Z.F., Doglioli A.M., Hu Z.Y., Marsaleix P., Carlotti F., 2010. The influence of hydrodynamic processes on zooplankton transport and distributions in the North Western Mediterranean: Estimates from a Lagrangian model, *Ecological Modelling*, 221, 2816-2827, <http://dx.doi.org/10.1016/j.ecolmodel.2010.07.025>

Pairaud I. L., Auclair F., Marsaleix P., Lyard F., Pichon A., 2010. Dynamics of the semi-diurnal and quarter-diurnal internal tides in the Bay of Biscay. Part 2: Baroclinic tides, *Continental Shelf Research*, 30, 253-269, <http://dx.doi.org/10.1016/j.csr.2009.10.008>

De Gaetano, P., Burlando, M., Doglioli, A.M., Petrenko, A.A., 2010, Wind forcing effects on coastal circulation and eddy formation around a cape, *Ocean Science Discussions* 7, 207-249

-50-

Bouchette, F., Schuster, M., Ghiene, J.-F., Denamiel, C., Roquin, C., Moussa, A., Marsaleix, P., Düringer, P., 2010, Hydrodynamics in Holocene Lake Mega-Chad, *Quaternary Research* 73, 226-236

Jordà G., De Mey P., 2010, Characterization of error dynamics in a 3D coastal model of the Catalan sea using stochastic modelling, *Continental Shelf Research*, 30, 419-441

Marsaleix P., Ulses C., Pairaud I., Herrmann M. J., Floor J. W., Estournel C., Auclair F., 2009. Open boundary conditions for internal gravity wave modelling using polarization relations. *Ocean Modelling*, 29, 27-42. <http://dx.doi.org/10.1016/j.ocemod.2009.02.010>

Marsaleix P., Auclair F., Estournel C., 2009. Low-order pressure gradient schemes in sigma coordinate models: The seamount test revisited. *Ocean Modelling*, 30, 169-177. <http://dx.doi.org/10.1016/j.ocemod.2009.06.011>

Estournel C., Auclair F., Lux M., Nguyen C., Marsaleix P., 2009. "Scale oriented" embedded modeling of the North-Western Mediterranean in the frame of MFSTEP. *Ocean Science*, 5, 73-90

Hu Z.Y., Doglioli A.M., Petrenko A.A., Marsaleix P., Dekeyser I., 2009. Numerical simulations of eddies in the Gulf of Lion. *Ocean Modelling*, 28, 203-208, <http://dx.doi.org/10.1016/j.ocemod.2009.02.004>

Rubio A., Gomis D., Jordà G., Espino M., 2009. Estimating geostrophic and total velocities from CTD and ADCP data: Intercomparison of different methods. *Journal of Marine Systems*, 77, 61-76, <http://dx.doi.org/10.1016/j.jmarsys.2008.11.009>

Le Hénaff M., De Mey P., Marsaleix P., 2009. Assessment of observational networks with the Representer Matrix Spectra method-application to a 3D coastal model of the Bay of Biscay. *Ocean Dynamics*, 59, 3-20 <http://dx.doi.org/10.1007/s10236-008-0144-7>

Bolaños R., Jorda G., Cateura J., Lopez J., Puigdefabregas J., Gomezand J., Espino M. , 2009, The XIOM: 20 years of a regional coastal observatory in the Spanish Catalan coast, *Journal of Marine Systems*, 77, 237-260. <http://dx.doi.org/10.1016/j.jmarsys.2007.12.018>

Fontana C., Grenz C., Pinazo C., Marsaleix P., Diaz F, 2009. Assimilation of SeaWiFS chlorophyll data into a 3D coupled physical biogeochemical model applied to a freshwater influenced coastal zone. *Continental Shelf Research*, <http://dx.doi.org/10.1016/j.csr.2009.03.005>

-40-

Rubio A., Barnier B., Jorda G., Espino M., Marsaleix P., 2009 Origin and dynamics of mesoscale eddies in the Catalan Sea (NW Mediterranean): Insight from a numerical model study. *Journal of Geophysical Research*, 114, C06009, doi:10.1029/2007JC004245

Marsaleix P., Auclair F., Floor J. W., Herrmann M. J., Estournel C., Pairaud I., Ulses C., 2008. Energy conservation issues in sigma-coordinate free-surface ocean models. *Ocean Modelling*. 20, 61-89. <http://dx.doi.org/10.1016/j.ocemod.2007.07.005>

Herrmann M., Estournel C., Déqué M. , Marsaleix P., Sevault F., Somot S., 2008, Dense water formation in the Gulf of Lions shelf: Impact of atmospheric interannual variability and climate change, *Continental shelf research*, 28, 2092-2112 doi:10.1016/j.csr.2008.03.003

Ulses, C., C. Estournel, P. Puig, X. Durrieu de Madron, and P. Marsaleix, 2008, Dense shelf water cascading in the northwestern Mediterranean during the cold winter 2005. Quantification of the export through the Gulf of Lion and the Catalan margin. *Geophysical Research Letters* 35, L07610 doi:10.1029/2008GL033257

Herrmann, M. J., S. Somot, F. Sevault, C. Estournel, and M. Deque, 2008. Modeling the deep convection in the northwestern Mediterranean Sea using an eddy-permitting and an eddy-resolving model: Case study of winter 1986-1987. *Journal of Geophysical Research*, 113, C04011 doi:10.1029/2006JC003991

Ulses, C., C. Estournel, J. Bonnin, X. Durrieu de Madron, and P. Marsaleix 2008. Impact of storms and dense water cascading on shelf-slope exchanges in the Gulf of Lion (NW Mediterranean). *Journal of Geophysical Research* 113, C02010, doi:10.1029/2006JC003795

Herrmann, M. J., and S. Somot, 2008. Relevance of ERA40 dynamical downscaling for modeling deep convection in the Mediterranean Sea, *Geophysical. Research Letters*, 35, L04607, doi:10.1029/2007GL032442

Pairaud I. L., Lyard F., Auclair F., Letellier T., Marsaleix P., 2008, Dynamics of the semi-diurnal and quarter-diurnal internal tides in the Bay of Biscay. Part 1: Barotropic tides, *Continental Shelf Research*, 28, 1294-1315 doi:10.1016/j.csr.2008.03.004

Ulses C., C. Estournel, X. Durrieu de Madron and A. Palanques, 2008, Suspended sediment transport in the Gulf of Lions (NW Mediterranean): Impact of extreme storms and floods. *Continental shelf research*, 28, 2048-2070 <http://dx.doi.org/10.1016/j.csr.2008.01.015>

Bouffard, J., S. Vignudelli, M. Herrmann, F. Lyard, P. Marsaleix, Y. Ménard, and P. Cipollini, 2008, Comparison of ocean dynamics with a regional circulation model and improved altimetry in the North-western Mediterranean. *Terrestrial, Atmospheric and Oceanic Sciences*, 19, 1-XXX, doi: 10.3319/TAO.2008.19.1-2.117(SA)

-30-

Ferré B., Durrieu de Madron X., Estournel C., Ulses C., Le Corre G., 2008. Impact of natural (waves and currents) and anthropogenic (trawl) resuspension on the export of particulate matter to the open ocean. Application to the Gulf of Lion (NW Mediterranean). *Continental Shelf Research*, 28, 2071-2091 <http://dx.doi.org/10.1016/j.csr.2008.02.002>

Bourrin F., Friend P.L., Amos C.L., Manca E., Ulses C., Palanques A., Durrieu de Madron X., Thompson C.E.L., 2008. Sediment dispersal from a typical Mediterranean flood: The Têt River, Gulf of Lions. *Continental Shelf Research*, 28, 1895-1910 <http://dx.doi.org/10.1016/j.csr.2008.06.005>

Bourrin F., Durrieu de Madron X., Heussner S., Estournel C., 2008. Impact of winter dense water formation on shelf sediment erosion (evidence from the Gulf of Lions, NW

Mediterranean). *Continental Shelf Research*, 28, 1984-1999, <http://dx.doi.org/10.1016/j.csr.2008.06.006>

Petrenko A., Dufau C., Estournel C., 2008, Barotropic eastward currents in the western Gulf of Lion, north-western Mediterranean Sea, during stratified conditions. *Journal of Marine Systems*, 74, 406-428, doi:10.1016/j.jmarsys.2008.03.004

Leredde Y., Denamiel C., Brambilla E., Lauer-Leredde C., Bouchette F., Marsaleix P., 2007. Hydrodynamics in the Gulf of Aigues-Mortes, NW Mediterranean Sea: In situ and modelling data. *Continental Shelf Research*. 27, 2389-2406 <http://dx.doi.org/10.1016/j.csr.2007.06.006>

Jorda G., Bolaños R., Espino M., Sanchez-Arcilla A., 2007. Assessment of the importance of the current-wave coupling in the shelf ocean forecasts. *Ocean Science*, 3, 345–362. link

Jorda G., Comerma E., Bolaños R., Espino M., 2007. Impact of forcing errors in the CAMCAT oil spill forecasting system. A sensitivity study. *Journal of Marine Systems* 65, 134-157 <http://dx.doi.org/10.1016/j.jmarsys.2005.11.016>

Cianelli D., Diaz F., Leredde Y., Marsaleix P., Carlotti F., 2007. Particle exchange and residence times in the North Western Mediterranean. *Nuovo Cimento C*, 30, 138-149 <http://dx.doi.org/10.1393/ncc/i2006-10239-y>

Marsaleix P., Auclair F., Estournel C., 2006, Considerations on Open Boundary Conditions for Regional and Coastal Ocean Models. *Journal of Atmospheric and Oceanic Technology*, 23,1604-1613, <http://dx.doi.org/10.1175/JTECH1930.1>

Gatti J., Petrenko A., Devenon J.L., Leredde Y, Ulses C., 2006. The Rhone river dilution zone present in the northeastern shelf of the Gulf of Lion in December 2003. *Continental Shelf Research*, 26, 1794-1805. <http://dx.doi.org/10.1016/j.csr.2006.05.012>

-20-

Guarracino, M.; Barnier, B., Marsaleix, P., Durrieu de Madron, X., Monaco, A., Escoubeyrou, K., Marty, J.C., 2006. Transfer of particulate matter from the northwestern Mediterranean continental margin: Variability and controlling factors. *Journal of Marine Research*. 64, 195-220. DOI: 10.1357/002224006777606498

Guizien K., Brochier T., Duchêne J.-C., Koh B.-S., Marsaleix P., 2006. Dispersal of *owenia fusiformis* larvae by wind-driven currents: turbulence, swimming behaviour and mortality in a three-dimensional stochastic model. *Marine Ecology Progress Series*, 311, 47-66.

Auclair F., Estournel C., Marsaleix P., Pairaud I. 2006. On coastal ocean embedded modeling. *Geophysical Research Letters*, 33, L14602. <http://dx.doi.org/10.1029/2006GL026099>

Estournel C., Zervakis V., Marsaleix P., Papadopoulos A., Auclair F., Perivoliotis L., Tragou E., 2005. Dense water formation and cascading in the Gulf of Thermaikos (North Aegean) from observations and modelling, *Continental Shelf Research*, 25, 2366-2386 doi:10.1016/j.csr.2005.08.014

Pairaud I., Auclair F., 2005. Combined wavelet and principal component analysis (WEof) of a scale oriented model of coastal ocean gravity waves *Dynamics of Atmospheres and Ocean*. 40, 254-282 doi:10.1016/j.dynatmoce.2005.06.001

Ulses C., Grenz C., Marsaleix P., Schaaff E., Estournel C., Meulé S., and Pinazo C., 2005 Circulation in a semi enclosed bay under the influence of strong fresh water input, *Journal of Marine Systems*, 56, 113-132 doi:10.1016/j.jmarsys.2005.02.001

Petrenko A., Leredde Y. and P. Marsaleix, 2005 Circulation in a stratified and wind-forced Gulf of Lions, NW Mediterranean Sea : in-situ and modeling data. *Continental Shelf Research*. 25, 7-27. doi:10.1016/j.csr.2004.09.004

Dufau-Julliand C., Marsaleix P., Petrenko A. and Dekeyser I., 2004 Three-dimensional modeling of the Gulf of Lion's hydrodynamics (northwest Mediterranean) during January 1999 (MOOGLI3 Experiment) and late winter 1999: Western Mediterranean Intermediate Water's (WIW's) formation and its cascading over the shelf break, *Journal of Geophysical Research*, 109, C11002, doi:10.1029/2003JC002019

Reffray G., Fraunié P. and P. Marsaleix, 2004 Secondary flows induced by wind forcing in the Rhône region of freshwater influence. *Ocean Dynamics*, 54, 179-196. doi: 10.1007/s10236-003-0079-y

Estournel C., Durrieu de Madron X., Marsaleix P., Auclair F., Julliand C. and R. Vehil, 2003 Observation and modelisation of the winter coastal oceanic circulation in the Gulf of Lions under wind conditions influenced by the continental orography (FETCH experiment). *Journal of Geophysical Research* 108, C3, pages 7-1 to 7-18. doi:10.1029/2001JC000825

-10-

Auclair F., Marsaleix P., and De Mey P., 2003. Space-time structure and dynamics of the forecast error in a coastal circulation model of the Gulf of Lions. *Dynamics of Atmospheres and Oceans*, 36, 309-346. doi:10.1016/S0377-0265(02)00068-4

Auclair F., Marsaleix P. and C. Estournel, 2001 The penetration of the northern current over the Gulf of Lion (western Mediterranean Sea) as a downscaling problem. *Oceanologica Acta*, 24, 529-544. doi:10.1016/S0399-1784(01)01166-5

Estournel C., Broche P., Marsaleix P., Devenon J.L., Auclair F. and Vehil R, 2001 The Rhone river plume in unsteady conditions : numerical and experimental results. *Estuarine, Coastal and Shelf Science*. 53, 25-38. doi:10.1006/ecss.2000.0685

Pinazo C., Marsaleix P., Millet B., Estournel C., Kondrachoff V. and R. Véhil. 2001 Phytoplankton variability in summer in the northwestern Mediterranean: modelling of the wind and freshwater impacts. *Journal of Coastal Research*. 17, 1, 146-161. Abstract

Auclair F., Casitas S., Marsaleix P., 2000. Application of an inverse method to coastal modelling. *Journal of Atmospheric and Oceanic Technology*. 17, 1368-1391. doi: 10.1175/1520-0426(2000)017<1368:AOAIMT>2.0.CO;2

Auclair F., Marsaleix P. and Estournel C., 2000 Sigma coordinate pressure gradient errors : evaluation and reduction by an inverse method. *Journal of Atmospheric and Oceanic Technology*, 17, 1348-1367. doi: 10.1175/1520-0426(2000)017<1348:SCPGEE>2.0.CO;2

Marsaleix P., Estournel C., Kondrachoff V. and R. Vehil, 1998 A numerical study of the formation of the Rhone river plume. *Journal of Marine Systems*., 14, 99-115. doi:10.1016/S0924-7963(97)00011-0

Estournel C., Kondrachoff V., Marsaleix P., Vehil R., 1997 The plume of the Rhône : numerical simulation and remote sensing, *Continental Shelf Research*, 17,899-924. doi:10.1016/S0278-4343(96)00064-7

Pinazo C., Marsaleix P., Millet B., Estournel C., Vehil R., 1996 Spatial and temporal variability of phytoplankton biomass in upwelling areas of northwestern Mediterranean: a coupled physical and biogeochemical approach. *Journal of Marine Systems*, 7, 161-191. doi:10.1016/0924-7963(95)00028-3

Johns B., Marsaleix P., Estournel C., Vehil R., 1992 On the wind-driven upwelling circulation in the Gulf of Lions, *Journal of Marine Systems*, 3, 309-320. doi:10.1016/0924-7963(92)90008-V

Part II: Papers to make a reference to the S model

General description of the S model:

Marsaleix P., Auclair F., Floor J. W., Herrmann M. J., Estournel C., Pairaud I., Ulses C., 2008. Energy conservation issues in sigma-coordinate free-surface ocean models. *Ocean Modelling*, 20, 61-89. <http://dx.doi.org/10.1016/j.ocemod.2007.07.005>

Non Hydrostatic Pressure:

Auclair F., Estournel C., Floor J. W., Herrmann M., Nguyen C., Marsaleix P., 2011. A non-hydrostatic algorithm for free-surface ocean modelling, *Ocean Modelling*, 36, 49-70
<http://dx.doi.org/10.1016/j.ocemod.2010.09.006>

Accuracy of the pressure gradient force (PGF) in terrain following coordinate:

Marsaleix P., Auclair F., Estournel C., 2009. Low-order pressure gradient schemes in sigma coordinate models: The seamount test revisited. *Ocean Modelling*, 30, 169-177.
<http://dx.doi.org/10.1016/j.ocemod.2009.06.011>

Implementation in the PGF of the compressibility terms of the equation of state:

Marsaleix P., Auclair F., Estournel C., Nguyen C., Ulses C., 2011. An accurate implementation of the compressibility terms in the equation of state in a low order pressure gradient scheme for sigma coordinate ocean models. *Ocean Modelling*, 40, 1-13
<http://dx.doi.org/10.1016/j.ocemod.2011.07.004>

Time stepping :

Marsaleix P., Auclair F., Estournel C., Nguyen C., Ulses C., 2012. Alternatives to the Robert Asselin filter. *Ocean Modelling*, 41, 53-66 <http://dx.doi.org/10.1016/j.ocemod.2011.11.002>

Open Boundary Conditions (OBC):

Marsaleix P., Auclair F., Estournel C., 2006, Considerations on Open Boundary Conditions for Regional and Coastal Ocean Models. *Journal of Atmospheric and Oceanic Technology*, 23, 1604-1613, <http://dx.doi.org/10.1175/JTECH1930.1>

Marsaleix P., Ulses C., Pairaud I., Herrmann M. J., Floor J. W., Estournel C., Auclair F., 2009. Open boundary conditions for internal gravity wave modelling using polarization relations. *Ocean Modelling*, 29, 27-42. <http://dx.doi.org/10.1016/j.ocemod.2009.02.010>

Air Sea Fluxes:

Estournel C., Auclair F, Lux M., Nguyen C., Marsaleix P., 2009. "Scale oriented" embedded modeling of the North-Western Mediterranean in the frame of MFSTEP. *Ocean Science*, 5, 73-90

Tides potential:

Pairaud I. L., Lyard F., Auclair F., Letellier T., Marsaleix P., 2008, Dynamics of the semi-diurnal and quarter-diurnal internal tides in the Bay of Biscay. Part 1: Barotropic tides, *Continental Shelf Research*, 28, 1294-1315 doi:10.1016/j.csr.2008.03.004

"Acknowledgment" sections of papers :

The Symphonie ocean model is developed by the SIROCCO group. Sources are available at <http://sirocco.omp.obs-mip.fr/outils/Symphonie/Sources/SymphonieSource.htm>