

ANTONELLO SALA

PERSONAL DATA

Citizenship: Italian
Place and date of birth: Ancona (Italy) February 27th, 1968
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EDUCATION AND PROFESSIONAL ACTIVITIES

- 1987 Diploma in *Electronic and Telecommunication* (Grade: 54/60) at the Technical High School “*V. Volterra*” of Ancona (Italy).
- 1990-pres Research scientist in the *Institute of Marine Sciences* (ISMAR) of the National Research Council (CNR, Ancona).
- 1991-95 Member of the development staff for the research programme financed by the EC Commission (Fisheries sector): FAR-project TE.2.444 “*Development of Fuel Saving Bottom Trawl*”.
- 1994-95 Oceanographic research under the *National Antarctic Research Program* (PNRA) at the Ross Sea (Antarctica) on board the RV “*Italica*”. PEA94 project 2b.2 “*Study of the Climatic System and Sea-Ice-Atmosphere Relations*”, financed by the Ministry of the university and scientific research and technology.
- 1994-96 Member of the development staff for the research programme financed by the EC Commission: UE.MED93.015 “*Intercalibration des campagnes internationales de chautage démersal en Méditerranée Centrale*”.
- 1994-pres Chief Examiner for Professional Fisheries license issue by the Port Authority of Ancona and Civitanova Marche (MC).
- 1995-98 Member of the development staff for the research programme financed by the EC Commission: Study proposal EEC 95/29 “*Efficacy and selectivity of the trawl used for the MEDITS project*”.
- 1995-98 Member of the development staff for the research programme financed by the Italian Ministry for the Agriculture and Forestry (Fishery and aquaculture directorate): “*Experiments for the evaluation of fish biomass of an Artificial Reef*”.
- 1996-99 Member of the development staff for the research programme financed by the EC Commission: UE-FAIR-CT96-1555 “*Development of predictive model of cod-end selectivity*”
- 1997 Master degree in *Mathematical, Physical and Natural Sciences* (5 year degree) with a specialisation on *Marine Biology and Oceanography* from the University of Ancona. Graduated with full marks (110/110 with honours) discussing the final dissertation “*Assessment of fish biomass of an artificial reef in the Adriatic Sea through acoustic methodology*”.

- 1998-pres Member of the National commission Unitex SC140 "Fishing nets", for the standardization of the European textile sector regulation within the Technical committee CEN/TC248 "Textiles and textile products".
- 1999 Professional biologist license.
- 1999-pres Member of the Italian Society of Marine Biology.
- 1999 Training and Mobility of Researchers Grant received from the EC Commission, to attend at the "Macrozooplankton Identification Course and the ETI Multimedia Linnaeus-II System Course" (University of Amsterdam).
- 1999 Scientific responsible for the research project financed by the EC Commission: RI project ERBFMGECT980135 "The compound eye as an indicator of age and shrinkage in *Meganyctiphanes norvegica*", in collaboration with the Norwegian University of Science and Technology at Trondheim.
- 2000 Principal investigator for the bio-acoustic properties concerning krill (*Euphausia superba* and *E. crystallorophias*) populations sampled during the scientific cruise at the Ross Sea (Antarctica) on board the RV "Italica". PEA99 project 8.3 "Evaluation of the Marine Living Resources in the Ross Sea (Krill, fishes, Minke whales and other Krill predators), their interactions and relations with marine environment (ice-dynamic)", financed by the Ministry of the University and Scientific Research and Technology.
- 2000 Norwegian Government fellowship received from the Research Council of Norway for the project EJ.vmo.IS-STP: "Using measurements of eyeball diameter to decipher the population dynamics of *Meganyctiphanes norvegica*".
- 2001 Supervisor of two thesis for the Master degree in *Mathematical, Physical and Natural Sciences* (University of Ancona):
- "Influence of the off-shore gas platform on the fish assemblage of the original habitat (Barbara NW – Northern Adriatic Sea)";
 - "Informative interactions among the euphausiid aggregations, sampled with acoustic technique during the spring 1994 and the summer 2000 (Ross Sea, Antarctica)".
- 2002-pres. Official Member of the ICES Working Group on Fishing Technology and Fishing Behaviour.
- 2002 Scientific responsible for the research project financed by the EC Commission: RI project HPRI-1999-CT00060 "Development of an efficient macrozooplankton net for marine bio-resources monitoring", in collaboration with the Norwegian University of Science and Technology at Trondheim.
- 2002-05 Scientific responsible for the research project (RTD Q5RS-2002-01328): "Development of predictive model of cod-end selectivity (Premecs-II)", financed by the EC Commission in the *Research and Technological Development (RTD)* context. Project co-ordinated by IFREMER (French institute for research and exploitation of the sea – Brest, France) and carried out in collaboration with MARLAB (Marine laboratory, fisheries research services – Aberdeen, Scotland), ENI (National graduate engineering school – Brest, France) and DIFRES (Danish institute for fisheries research – Hirtshals, Denmark).

- 2003-2005 Scientific responsible for the research project (MIPAF 6B4): *“Using the square mesh codends in Italian trawl net: effect on efficiency and selectivity”*, financed by the Italian Ministry of Agriculture and Forestry (Fishery and Aquaculture directorate).
- 2004 Principal investigator of the *“Biology of the krill”* research group and responsible of the sampling operations during the scientific cruise at the Ross Sea (Antarctica) on board the RV *“Italica”*. PEA2004 project 8.4 *“Krill, Environment and Predators (KEP): interactions, functional relationships and ecological implications for the Ross Sea (Antarctica) resources management”*, financed by the Ministry of the University and Scientific Research and Technology.
- 2004-05 Scientific responsible for the research project: *“Environmental impact reduction of the Italian bottom trawling: twin trawls experiment”*, financed by the EC Commission through the Marche Regional Authority (Fishery and Hunt directorate) in the *Financial Instrument for Fisheries Guidance (FIFG)* context.
- 2005-pres Head of the Fishing Technology Unit at the *Institute of Marine Sciences (ISMAR, Fisheries Section, Ancona)* of the *National Research Council (CNR)*.
- 2005-07 Scientific responsible and principal investigator for the Unit *“Biology and ecology of Krill”* in the research project PEA2005 *“An investigation on the three key species of Middle Trophic Level of the Ross Sea (Antarctic krill, Ice krill and Silver fish) and on their interactions with the Top-Level Species (birds, whales, seals) and the environment (M.T.L.)”*, financed by the Ministry of the University and Scientific Research and Technology.
- 2006-09 Scientific responsible for the research project (SSP8-CT2004-022576): *“DEGREE: Development of fishing Gears with Reduced Effects on the Environment”*, financed by the EC Commission in the *Specific Targeted Research or innovation Project (STREP)* context. Project co-ordinated by RIVO (Animal Sciences Group Wageningen IJmuiden, The Netherlands).

CONGRESS PARTICIPATIONS

- International Meeting of the “ICES Working Group on Fishing Technology and Fish Behaviour” (22-24 April 1991, Ancona);
- International Symposium on “Assessment of demersal resources by direct methods in the Mediterranean and adjacent seas” (18-21 March 1998, Pisa), oral presentations: *“Efficacy of the trawl used for the Medits project”*;
- National Conference on “Fishing and Aquaculture researches within the limits of the 41/82 law” (15-16 December 1998, Rome), oral presentations: *“Comparison of the performances of some Italian bottom trawls”* and *“Further Observations on the performance of the fishing gears used for demersal stock assessment in Italy”*;
- International Congress of the “CCAMLR Working Group on Ecosystem Monitoring and Management” (17-28 July 2000, Taormina), oral presentation: *“Summer distribution, abundance and structure of krill populations (Euphausia superba and Euphausia crystallophias) sampled in the western Ross Sea (January-February 2000)”*;

- “32nd National Congress of the (SIBM) Italian Marine Biology Society” (4-9 June 2001, Numana AN), oral presentation: *“Sampling catches of Engraulis encrasicolus and Sardina pilchardus in relation with temperature and fishing depth (Adriatic Sea)”*;
- “17th International Congress on Acoustics” (2-7 September 2001, Rome), Chairman of the “Hydroacoustics and underwater acoustics” session invited by the congress organisation as scientific expert and oral presentation: *“Stationary hydroacoustic methodology to determine diel activity of fish biomass in the artificial habitats”*;
- 2-7 Settembre 2001, Roma: “17th International Congress on Acoustics”, presentazione orale: *“Stationary hydroacoustic methodology to determine diel activity of fish biomass in the artificial habitats”*. Chairman della sessione “Hydroacoustics and underwater acoustics”.
- International Meeting of the “ICES Working Group on Fishing Technology and Fish Behaviour” (6-8 June 2002, Sète), oral presentation: *“Development of fuel saving bottom trawl”*.
- “ICES Symposium on Fish Behaviour in Exploited Ecosystems” (22-26 June 2003 Bergen, Norway), poster presentation: *“Application of multibeam sonar and stationary hydroacoustic systems for 4D marine fish biomass monitoring”*.
- International Meeting of the “ICES Working Group on Fishing Technology and Fish Behaviour” (27-28 June 2003, Bergen).
- “Workshop on Discard Sampling Methodology and Raising Procedures” (2-4 September 2003, Copenhagen, Denmark), invited by the European Commission (DG-FISH) as scientific expert.
- International Meeting of the “ICES Working Group on Fishing Technology and Fish Behaviour” (20-23 April 2004, Gdynia), poster presentation: *“Development of an experimental method for quantifying the resistance to opening of netting panels”*.
- “Working group of GFCM on standardization of selectivity methods applied to trawling in Mediterranean Sea” (9-11 February 2005, Sète (France), oral presentations: *“Codend selectivity, fish escape behaviour and fish morphology in the Mediterranean Sea trials of UE project PREMECS-II”* and *“Approach and methodology used in fishing experiments with square mesh cod-end in the Adriatic Sea”*.
- International Meeting of the “ICES Working Group on Fishing Technology and Fish Behaviour” (18-22 April 2005, Rome), poster presentation: *“Selectivity comparison of diamond and square mesh codends of Mediterranean bottom trawl”*.
- International Meeting of the “ICES Working Group on Fishing Technology and Fish Behaviour” (3-7 April 2006, Izmir), paper presentation: *“The influence of some netting material properties on PA codend size selectivity of Mediterranean bottom trawl”*.

LANGUAGES

- Italian: mother tongue;
- English: written and spoken fluent. Course of technical English at *Regent London Institute* (1991), certified by *The British Council*;
- French and Spanish: little knowledge.

COMPUTER SKILLS

DOS and Windows (95, 98, NT) programming environment:

- Borland Turbo Pascal 7.0 Object Oriented programming (*data acquisition, post-processing*): 12 years of experience;
- Visual Basic (*database management*): 8 years of experience;
- Word, Excel, Power Point and Access: 16 years of experience;
- Autocad (*2D and 3D PC-based design software*): 15 years of experience;
- Golden Surfer program (*surface mapping and analysis, contouring, gridding, 2D map generation*): 9 years of experience;
- SPSS statistical software package (*Multivariate analysis of variance, Nonparametric tests, Discriminant analysis, Cluster analysis, Bivariate and partial correlations, Simple and multiple linear correlations*): 9 years of experience;
- Zeiss KS100 Interactive measurement software (*Video Analysis system software, digitisation and measurement of the image material, statistical analysis for the evaluation of measurement results*): 5 years of experience;
- ETT's Linnaeus II interactive software (*creation of taxonomic databases, optimisation of the species identification and biodiversity documentation, comparison of species distribution patterns*): 5 years of experience.

TRAINING COURSE

- Professional development course on “*Advanced Underwater Acoustics*” (2-6 July 2001, London) organised by the *Imperial College of London* together with *Seiche.Com Ltd.*;
- “*Statistical Analysis using SPSS*” (9-11 July 2001, Rome) organised by SPSS Italy.
- “*Advanced statistical techniques: Regression analysis using SPSS*” (10-11 December 2001, Milan) organised by SPSS Italy.
- “*International Training Course in Trawl Technology*” (27 October – 1 November 2002) at the North Sea Centre Flume Tank, organised by SINTEF Fisheries and Aquaculture, Hirtshals, Denmark.
- “*Applied Multivariate Statistical Analysis using SPSS*” (16-18 December 2002, Milan) organised by SPSS Italy.
- Selectivity analysis using R (16-18 October 2006) at the Ege University, Izmir, Turkey.

SCIENTIFIC REPORTS

- Fiorentini L, Cosimi G, **Sala A**, Palumbo V (1993) Measurement of the hydrodynamic parameters of the fishing gears used for demersal stock assessment in Italy, in order to produce comparable results. *Report to the Italian Ministry of Merchant Marine, Fishery Direct.* 151pp
- Artegiani A, **Sala A**, Testa G, Dell'Amico F (1995) Physical oceanographic conditions in the Southern Pacific Ocean and in the Western Ross Sea *In: Final Report of the Italian Antarctic Expedition (January-*

February 1995). *Antarctic project, Ant 95/02*: 424-427

- Fiorentini L, Cosimi G, **Sala A**, Palumbo V, Leonori I (1996) Intercalibration des campagnes internationales de chautage démersal en Méditerranée centrale. *IRPEM-CE project MED/93/015 – Final Report*: 59 pp
- Fiorentini L, Cosimi G, **Sala A**, Leonori I, Palumbo V (1996) Effect of tow duration on Medits results. *Medits Meeting Report Paris*, 28-30 November. *Annex III: XVI-XVII*
- Fiorentini L, Dremière PY, Coail JY, Cosimi G, Leonori I, Palumbo V, **Sala A**, Spagnolo A, Vacherot JP (1998) Efficacy and selectivity of the trawl used for the MEDITS project. *IRPEM-EC Study 95/29 – Final Report*: 120 pp
- **Sala A** (1998) Descriptive Elements of the Environmental in the four fishing trips of the ESMED project. In Fiorentini L *et al.* (1998) *IRPEM-EC Study 95/29 – Final Report*: 85-90
- Bombace G, Fabi G, **Sala A**, Spagnolo A (1998) Experiments for the assessment of fish biomass in artificial reef of protected marine zone. *Report to the Italian Ministry of Agriculture and Forestry, Fishery and Aquaculture Direct.*: 79 pp
- Azzali M, Catacchio S, Kalinowski J, **Sala A** (2000) Assessment of the living resources in the Ross Sea (krill, Minke whales, fish and other krill predators), of their interactions and relations with environment (ice dynamics). In: *Final Report of the Italian Antarctic Expedition (January-February 2000). Antarctic project, Ant 2000/01*: 281-293
- Ferretti M, **Sala A**, Piccinetti C, Ungaro N, 2005 – Selectivity of Italian bottom trawl with diamond and square mesh codends. *Final Report to the Italian Ministry of Agriculture and Forestry (Project MIPAF n. 6-B-4)*: 149 pp.
- Priour D, O'Neill F, **Sala A**, Chevaillier P, Herrmann B, 2006. PREMECS-II: Development of predictive model of cod-end selectivity. *Final Report to the European Commission of the RTD project Q5RS-2002-01328*: 265 pp

PUBLICATIONS

- **Sala A**, Speranza S, 1993. The local inshore fishery in the Compartment of Ancona. *Fishery News Sheet*, XL(12): 13-17
- Fiorentini L, Cosimi G, **Sala A**, Palumbo V, 1994. Characteristic and performance of the fishing gears used for demersal stock assessment in Italy. *Biol Mar Medit*, I(2): 115-134
- Fiorentini L, Cosimi G, **Sala A**, Leonori I, Palumbo V, 1998. Further observations on the performance of the fishing gears used for demersal stock assessment in Italy. *Biol Mar Medit*, V(3): 156-165
- Bombace G, Fabi G, Leonori I, **Sala A**, Spagnolo A, 1998. Evaluation of fish biomass of an artificial reef in the Adriatic sea through acoustic methodology. *Biol Mar Medit*, V(3): 1844-1854
- Fiorentini L, Cosimi G, Leonori I, **Sala A**, Palumbo V, 1998. Comparison of the performances of some Italian bottom trawls. *Biol Mar Medit*, V(3): 802-812
- Dremière PY, Fiorentini L, Cosimi G, Leonori I, **Sala A**, Spagnolo A, 1999. Escapement from the main body of the bottom trawl used for the Mediterranean International Trawl Survey (MEDITS). *Aquat Living Resour* 12(3): 207-217

- Fiorentini L, Dremière PY, Leonori I, **Sala A**, Palumbo V, 1999. Efficiency of the bottom trawl used for the Mediterranean International Trawl Survey (MEDITS). *Aquat Living Resour* 12(3): 187-205
- Azzali M, **Sala A**, Brancato G, 2000. Summer distribution, abundance and structure of krill populations (*Euphausia superba* and *Euphausia crystallophias*) sampled in the western Ross Sea (January-February 2000). *CCAMLR WG-EMM-00/38 Taormina (Italy)*, 17-28 July 2000
- Cosimi G, Leonori I, **Sala A**, Palumbo V, 2001. Principali Attrezzi per la Pesca professionale Marittima (Sistematica e Normativa). In Gramitto ME (ed.) *La gestione della Pesca Marittima in Italia, fondamenti tecnico-biologici e normativa vigente. Consiglio Nazionale delle Ricerche, Monografie scientifiche (Serie Scienze e tecnologie dell'Ambiente), Roma: 239-266*
- **Sala A**, 2002. Development of fuel saving bottom trawl. Report of the ICES Fisheries Technology Committee Working Group on Fishing Technology and Fish Behaviour, Sète (France), ICES CM 2002/B.01: 53 pp
- **Sala A**, Azzali M, Russo A, 2002. Krill of the Ross Sea: distribution, abundance and demography of *Euphausia superba* and *Euphausia crystallophias* during the Italian Antarctic Expedition (January-February 2000). *Scientia Marina* 66(2): 123-133
- **Sala A**, Cosimi G, Palumbo V, 2002. Sampling catches of *Engraulis encrasicolus* and *Sardina pilchardus* in relation with temperature and fishing depth (Adriatic Sea). *Biol Mar Medit* IX(1): 96-104
- Fabi G, **Sala A**, 2002 An assessment of biomass and diel activity of fish at an artificial reef (Adriatic sea) using stationary hydroacoustic technique. *ICES Journal of Marine Science* 59(2): 411-420
- Azzali M, **Sala A**, Manoukian S, 2002. Design of the Italian acoustic survey in the Ross Sea for the Austral summer 2003/04. *CCAMLR WG-EMM-02/31 Big Sky (Montana, USA)*, 5-16 August 2002: 15 pp.
- **Sala A**, Lucchetti A, Buglioni G, 2004. The change in physical properties of some nylon (PA) netting samples before and after use. *Fisheries Research* 69: 181-188.
- Fiorentini L, **Sala A**, Hansen K, Cosimi G, Palumbo V, 2004. Comparison between model testing and full-scale trials of new trawl design for Italian bottom fisheries. *Fisheries Science* 70: 349-359.
- Azzali M, Russo A, **Sala A**, De Felice A, Catalano B, 2004. Preliminary results of a survey on krill, environment and predators carried out in December 2003 and in January 2004 (Project 8.4). *CCAMLR WG-EMM-04/71 Siena (Italy)*, 12-23 July 2004: 23 pp.
- **Sala A**, O'Neill FG, Buglioni G, Cosimi G, Palumbo V, Lucchetti A, 2004. Development of an experimental method for quantifying the resistance to opening of netting panels. Report of the ICES Fisheries Technology Committee Working Group on Fishing Technology and Fish Behaviour, Gdynia (Poland), ICES CM 2004/B.05 Ref. ACE: 189 pp
- **Sala A**, Piccinetti C, Ferretti M, Buglioni G, Lucchetti A, Palumbo V, Ungaro N, 2005. Selectivity comparison of diamond and square mesh codends of Mediterranean bottom trawl. Report of the ICES Fisheries Technology Committee Working Group on Fishing Technology and Fish Behaviour, Rome (Italy), ICES CM 2005/B.04 Ref. FAO: 283 pp
- **Sala A**, Buglioni G, Lucchetti A, Palumbo V, 2006. The influence of some netting material properties on PA codend size selectivity of Mediterranean bottom trawl. Report of the ICES Fisheries Technology

Committee Working Group on Fishing Technology and Fish Behaviour, Rome (Italy), ICES CM 2006/FTC:06: 180 pp

- **Sala A**, Priour D, Herrmann B, 2006. Experimental and theoretical study of red mullet (*Mullus barbatus*) selection in codends of Mediterranean bottom trawls. Aquatic Living Resources 19: 317-327.
- **Sala A**, Lucchetti A, Buglioni G, 2006. The influence of twine thickness on the size selectivity of polyamide codends in a Mediterranean bottom trawl. Fisheries Research, 83: 192-203.
- **Sala A**, Fabi G, Manoukian S, 2007.

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Affoncello Sala



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