

Programme for 5th International Otolith Symposium

Sunday, 19 October				
REGISTRATION		18:00	Palmira Beach Hotel	
"A word in your ear(stone)" ICEBREAKER		19:00		
Monday, 20 October				
REGISTRATION		8:30	Casal saloon	
SYMPOSIUM OPENING		9:30	Auditorium	
Keynote Theme I: Environmental indicators		10:00	Auditorium	IA_Vasconcelos_Key (A. Geffen speaker presentation)
Coffee Break & Burn		10:45	Poster Room	
MORNING PLENARY SESSION		IA	10:00 - 13:10	Auditorium Moderators S. Campana, F. Cerna
Protoliths: protoscape and fish odyssey			11:15	IA_Daverat_00
Using fish ear bones as proxies for tracing changes in climate			11:30	IA_Gillanders_01
Investigating the bomb radiocarbon flux in the southern Pacific Ocean with otolith radiocarbon			11:50	IA_Grammer_02
Virtual beam shaping femtosecond laser ablation: a new tool for sensitive high spatial resolution otolith microchemistry.			12:10	IA_Pecheyran_03
Natural habitat contributes more to an estuarine fish production than artificial habitat does: variability in growth and mortality rates of larval and juvenile temperate bass cohorts estimated from otolith microstructures			12:30	IA_Shoji_04
Do variations in the elemental concentrations in otoliths of marine fishes really track variations in water chemistry?			12:50	IA_Trueaman_05
Lunch lapilli			13:10	
AFTERNOON PARALLEL SESSION		IB	14:30 - 16:10	Auditorium Moderators R. Vasconcelos, I. Catalan
Shades of Sophie Dove? The potential of eye lens chemistry as a complementary archive of environmentally relevant information			14:30	IB_Limburg_01
Stable isotopic records of otoliths in detecting climate-related regime shifts and the effects of ocean acidification			14:50	IB_Gao_02
Ongoing ageing of a habitat-forming deep-sea coral <i>Solenosmilia variabilis</i> – information to assess recovery potential from anthropogenic impacts			15:10	IB_Tracey_03
Effects of ocean acidification on otolith growth and size-selective mortality of larval Atlantic cod and Atlantic herring			15:30	IB_Clemmesen_04
Detecting interannual shifts in otolith microchemistry before, during, and after the Deepwater Horizon oil spill			15:50	IB_Granneman_05
AFTERNOON PARALLEL SESSION		IC	14:30 - 16:10	Seminar Room Moderators A. Andrews, P. Grønkjær
A stitch in time: using chemical chronologies from otoliths to reconstruct larval dispersal environments			14:30	IC_Sweaver_01
Otolith-derived estimates of marine temperature use by West Greenland Atlantic salmon (<i>Salmo salar</i>)			14:50	IC_Power_02

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A 200 year archeozoological analysis of Pacific cod life history as revealed through Ion Microprobe oxygen isotope ratios in otoliths		15:10		IC_Helser_03
Alaskan lake trout biochronologies as long-term indicators of climate and productivity		15:30		IC_Wilhelm_04
Insights into historical New Zealand marine shelf productivity using ancient fish otoliths		15:50		IC_Neil_05
Coffee Increments		16:10	Poster Room	
AFTERNOON PARALLEL SESSION		IB	16:40 – 18:00	Auditorium
				Moderators B. Gillanders, H.de Pontual
An investigation of connectivity among estuarine tapertail anchovies <i>Coilia nasus</i> from the Yangtze River, Yellow Sea and Poyang Lake		16:40		IB_Yang_06
Extracting environmental histories from sclerochronological structures - Recursive partitioning as a mean to explore multielemental composition of fish otolith		17:00		IB_Vignon_07
Relative contribution of estuarine nursery areas to the adult population of the temperate seabass <i>Lateolabrax japonicus</i> in Tango Bay, as revealed by otolith Sr:Ca ratios		17:20		IB_Yamashita_08
Near-reef elemental signals in the otoliths of <i>Pomacentrus amboinensis</i> (Pomacentridae)		17:40		IB_Sih_09
AFTERNOON PARALLEL SESSION		IC	16:40 – 18:00	Seminar Room
				Moderators D. Tracey, C. Trueman
Contrasting environmental drivers of adult and juvenile growth in a marine fish		16:40		IC_Ong_06
Examining the interactions of growth, climate and recruitment of boarfish (<i>Capros aper</i>) for a better understanding of the recent population expansion		17:00		IC_Davies Coad_07
Broad and local scale drivers of growth of an estuarine fish species and implications for climate change		17:20		IC_Doubleday_08
Comparison of Slimy Sculpin (<i>Cottus cognatus</i>) annual growth in contrasting regulated and unregulated riverine environments		17:40		IC_Kelly_09
OTOCHUKI ID		18:15 - 19:15	Auditorium	Moderator A. Geffen
Migrating Atlantic cod otoliths reflect movement through water masses: linking data storage tag data with high resolution trace element and isotope geochemical signatures		18:15		ID_Neville_01
Settlement variability of <i>Mullus surmuletus</i> by means of otolith sclerochronology		18:20		ID_Matteo_03
Growth of King George whiting: an investigation of climatic influences on otolith growth		18:25		ID_Mazloumi_05
Otolith chemistry discriminates water mass occupancy of Arctic fishes in the Chukchi Sea		18:30		ID_Norcross_06
Otolith biochronologies and the present, past, and future of the California Current upwelling system		18:35		ID_Black_07

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Life-history connectivity and climate-related change in distribution of red hake (<i>Urophycis chuss</i>) on the northeast United States continental shelf.	18:40	ID_Robillard_08
Temperature and oxygen isotope variability of North Sea Basin shelf waters during the early Eocene, recorded by fish otoliths	18:45	ID_Vanhove_09
Does Ba:Ca and Sr:Ca ratios always reflect ambient water composition where Atlantic salmon (<i>Salmo salar</i>) inhabits?	18:50	ID_Bareille_10
Comments on the microstructure of vertebrae, and estimates of age and growth of the blue shark, <i>Prionace glauca</i> (L., 1758), in the southwest Atlantic	18:55	ID_Montealegre-Quijano_12
Tuesday, 21 October		
MORNING PLENARY SESSION	IIA	9:00 - 12:35 Auditorium
		Moderators Y. Yamashita, B. Walther
Keynote Theme II: Community indicators	9:00	Auditorium
		IIA_Nolf_Key (A. Lombarte speaker presentation)
What do we know about otolith function in hearing? – Insights from cichlids and livebearing fish	9:45	IIA_Schulz-Mirbach_01
Stable carbon isotopes in marine fishes otoliths	10:05	IIA_Shores_02
Eleven years of the interactive AFORO (Shape analysis of otoliths) database web site (2003/2014)	10:25	IIA_Lombarte_03
Coffee check		10:45 Poster Room
Multi-decadal biochronologies indicate species-specific responses to environmental change	11:15	IIA_Izzo_04
A 100-year assessment of biological change in SE Australian waters: novel insight using fish otoliths	11:35	IIA_Morrongiello_05
Prey composition analysis using otolith morphology: a case study of bigeye tuna <i>Thunnus obesus</i> in the western Indian Ocean	11:55	IIA_Chang_06
The use of otoliths to examine trophic interactions between California sea lions and artisanal fisheries on the west coast of the Baja California peninsula	12:15	IIA_Tobar_07
Lunch lobes		12:35
AFTERNOON PARALLEL SESSION	IIB	14:00 - 15:40 Auditorium
		Moderators D. Nolf, J. Panfili
May otolith morphology be used for measuring biodiversity of marine fish assemblages?	14:00	IIB_Tuset_01
Inter-population differences in otolith morphology are genetically encoded in <i>Aphanius fasciatus</i> (Cyprinodontiformes, killifishes)	14:20	IIB_Reichenbacher_02
Evolution of trisopterine Gadidae with otoliths	14:40	IIB_Gaemers_03
Variability in the Santa Barbara Basin Fish Assemblage in the Last Two Millennia Inferred from the Fossil Otolith Record	15:00	IIB_Jones_04
Fish otolith assemblages on the Recent NE Atlantic sea bottoms	15:20	IIB_Lin_05
AFTERNOON PARALLEL SESSION	IIC	14:00 - 15:40 Seminar Room
		Moderators K. Limburg, A. Volpedo

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Determining the foraging grounds of the Great Cormorant by otolith shape and chemistry	14:00		IIC_Oehm_01
The use of otolith microstructure for analyzing effects of ectoparasites on nearshore fish larvae	14:20		IIC_Landaeta_02
Functional diversity and behavioral responses to depth gradients revealed by otolith morphology in deep-sea fishes	14:40		IIC_Chung_03
Discriminating cryptic speciation using multivariate analysis of otolith morphometrics	15:00		IIC_Wakefield_04
Fish freight: using strontium isotope transect analysis to quantify the role of fishes in the transport of energy and nutrients in rivers	15:20		IIC_Crook_05
OTOCHUKI	IIID & IVD	15:50 - 16:40	Auditorium
			Moderator B. Black
Movements of the North Atlantic albacore (<i>Thunnus alalunga</i>) revealed by otolith $\delta^{18}O$, $\delta^{13}C$, Sr:Ca, Mg:Ca, Mn:Ca and Ba:Ca chronologies	15:50		IIID_Fraile_01
Stock identification of <i>Sprattus sprattus</i> within the Celtic Sea Ecoregion using otolith shape and microstructure	15:55		IIID_Moore_02
Residency and Habitat Use of Southern Flounder in North Carolina Coastal Watersheds	16:00		IIID_Rulifson_03
Discrimination of <i>Sperata seenghala</i> stocks inhabiting three rivers of the Gangetic river system using elemental fingerprints on otoliths	16:05		IIID_Khan_04
Connectivity and fish population structure: perspectives from otolith geochemistry and genetic markers	16:10		IIID_Reis-Santos_05
Distinguishing Blacktip Shark, <i>Carcharhinus limbatus</i> , Nursery Areas in the Northern Gulf of Mexico with Vertebral Chemical Signatures	16:15		IIID_Lewis_06
Natal Origin of Pamlico Sound, North Carolina, Striped Bass Inferred from Otolith Chemistry	16:20		IIID_Dobbs_07
Using Otolith Shape Analysis as a tool of stock discrimination of the anchovy subspecies in the Black Sea	16:25		IIID_Sahin_08
Provenance and migration patterns of European whitefish <i>Coregonus lavaretus</i> (L.) s.l. in the Baltic Sea – combining otolith geochemistry and gill raker counts	16:30		IIID_Rohtla_09
Early life history of <i>Terapon jarbua</i> (Forsskål, 1775) using microstructures and Laser Ablation ICP-MS elemental composition of otoliths	16:35		IVD_Lavergne_08
Use of oxygen and carbon stable isotopes in otoliths to study fish movement and connectivity in <i>Lipophrys pholis</i>	16:40		IVD_Moreira_15
"Keeping earstones to the grindstones" POSTER SESSION AND WINE BAR	16:45 - 19:00	Poster Room	Theme and Workshop Posters on display all week

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Wednesday, 22 October			
AGE VALIDATION WORKSHOP	9:00 - 17:45	Auditorium	
Title	Time	(Moderator) Presenter	Reference number
<i>Opening remarks</i>	09:00	(Richard McBride) Richard McBride	
Use of the stable oxygen isotope, ¹⁸ O, in otoliths as an indicator of fish life history events and age validation	09:05	Craig Kestelle	WSAgeOral_ Kestelle_08
Refined bomb radiocarbon dating of two iconic fishes of the Great Barrier Reef	09:25	Allen Andrews	WSAgeOral_ Andrews_13
Advances in Ageing Techniques and Age Interpretation for U.S. West Coast Groundfish	09:55	Owen Hamel	WSAgeOral_ Hamel_10
<i>General discussion</i>	10:25		
Coffee Break	10:40		
Validation of age determination from Otoliths for the Anchovy in the Bay of Biscay.	11:00	(Ole Thomas Albert) Andres Uriarte	WSAgeOral_ Uriarte_06
Holistic approach on the age validation for the red mullet (<i>Mullus barbatus</i>) in the Southern Adriatic Sea (Central Mediterranean)	11:20	Pierluigi Carbonara	WSAgeOral_ Carbonara_15
A question of winter growth: Interpretation of Quarter 4 Celtic Sea whiting otoliths	11:40	Imelda Hehir	WSAgeOral_ Hehir_04
Can otolith weight be used as a trustworthy and quick predictor of age in <i>Pagellus erythrinus</i> (Pisces, Sparidae)?	12:00	Paraskevi Niki Lampri	WSAgeOral_ Lampri_09
Use and nonuse of tests of symmetry in age validation studies	12:20	Richard McBride	WSAgeOral_ McBride_03
<i>General discussion</i>	12:50		
Lunch	13:00		
Validation of annual zones in Greenland halibut otoliths from recaptures of chemically marked fish	14:30	(Allen Andrews) Ole Thomas Albert	WSAgeOral_ Albert_16
Age validation of monkfish (<i>Lophius americanus</i>)	14:50	Crista Bank	WSAgeOral_ Bank_11
Age and growth validation of the common thresher shark (<i>Alopias vulpinus</i>) in the northeastern Pacific Ocean	15:10	Natalie Spear	WSAgeOral_ Spear_02
Validation of the first annual increment deposition in the otoliths of European anchovy (<i>Engraulis encrasicolus</i> L.) in the Bay of Biscay	15:30	Naroa Aldanondo	WSAgeOral_ Aldanondo_05
Coffee Break	15:50		
Validation of daily increments in the otoliths of Atlanto-Iberian sardine larvae (<i>Sardina pilchardus</i> Walbaum, 1792) reared under different diets.	16:20	(Allen Andrews) Susana Ferreira	WSAgeOral_ Ferreira_07
Oral posters (10 min)	16:40 – 17:30	TBA	
<i>General discussion and concluding remarks</i>	17:30	Allen Andrews	

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OTOLITH SHAPE ANALYSIS WORKSHOP		9:00 - 18:00	Seminar Room	
Title	Time	(Moderator) Presenter	Reference	number
<i>Introduction to otolith shape analysis; theory behind the practice</i>	09:00	(Audrey Geffen) Audrey Geffen		
Herring otolith shape – a tool for gauging stock complexity?	09:10	Lotte Worsøe Clausen	WSShape Worsøe Clausen_01	
Disentangling and quantifying sources of otolith shape variation across multiple scales using a new hierarchal partitioning approach	09:30	Matthias Vignon	WSShape_Vignon_04	
Morphological analysis applied to the shape of the sagitta of <i>Fundulus persimilis</i> (Cyprinodontidae).	09:40	Veronica Rivera	WSShape_Rivera_02	
Morphometric analysis of the sagitta otoliths of <i>Pterois volitans</i>	09:45	Jacob Rubio	WSShape_Rubio_03	
Otolith growth and shape changes during ontogeny in Atlantic bluefin tuna	09:50	Persefoni Megalofonou	WSShape_ Megalofonou_06	
Discriminating stocks of common dentex (<i>Dentex dentex</i>) around Corsica Island (NW Mediterranean) using two otolith shape classification methods	09:55	Marie Baudouin	WSShape_Baudouin_07	
Image acquisition - code of best practice for obtaining high quality images with unambiguous outlines	09:55	Lotte Worsøe Clausen and Antoni Lombarte	WSShape Worsøe Clausen_08	
Coffee Break		10:40		
Image processing, outline generation and shape data extraction; interactive exercise	11:00	(Deirdre Brophy) Deirdre Brophy	WSShape_Brophy_09	
shapeR: an R package to study otolith shape variation	12:10	Lisa Anne Libungan	WSShape_Libungan_11	
What next? Introduction to analysing and interpreting otolith shape variation	12:30	Deirdre Brophy		
Lunch		13:00		
Assessment and avoidance of pitfalls by use of Fourier techniques in discrimination analysis of otolith contours from different stocks	14:00	(Alf Harbitz) Alf Harbitz	WSShape_Harbitz_12	
Statistical analysis of population assignment for fisheries management employing otolith characteristics; interactive exercise	15:05	Henrik Mosegaard		
Coffee Break		15:45		
(CTD) Statistical analysis of population assignment for fisheries management employing otolith characteristics; interactive exercise	16:05	Henrik Mosegaard	WSShape_ Mosegaard_13	
Otolith identification system based on image contour analysis	16:30	Youssef El Habouz	WSShape_ElHabouz__05	
A conceptual modification of three Fourier techniques to represent 2D closed contours that requires only one frequency to reproduce a pure ellipse	16:40	Alf Harbitz	WSShape_Harbitz_14	
Parameterization of 3D AFORO otolith surfaces	16:50	Pere Marti-Puig	WSShape Marti-Puig_10	
Operational viability of stock-separation using shape indices derived from the otolith morphometric outline. An example using sprat and herring	17:00	James Mapp	WSShape_Mapp_15	

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Affordable 3D scanning of small otoliths for improved shape analysis by photogrammetry techniques	17:10	Andreas Zitek	WSShape_Zitek_16
Morphometric analysis of the sagitta otoliths of Sciaenidae from Malaysia	17:20	Kar-Hoe Loh	WSShape_Loh_17
<i>Panel Discussion</i>	17:30		

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Thursday, 23 October

MORNING PLENARY SESSION		IIIA	9:00 - 13:10	Auditorium	Moderators C. Clemmesen, N. Aldanondo
Keynote Theme III: Population indicators			09:00	Auditorium	IIIA_Thorrold_Key (B. Morales-Nin speaker presentation)
Identifying the mechanisms shaping population structure in fish with dispersive life stages			9:45		IIIA_Wright_01
After two centuries of fish sclerochronology: the hegemony of otolith studies			10:05		IIIA_Panfili_02
Herring year classes after 1904 - how have they affected growth of subsequent year classes?			10:25		IIIA_Folkvord_03
Coffee grinder			10:45	Poster Room	
Untangling inter-stock differences in otolith d18O signatures: insights from a decade of plaice archival tagging.			11:15		IIIA_Darnaude_04
Stable isotopes in otoliths: what have we learned so far?			11:35		IIIA_Huijbers_05
Time and plaice: decadal changes in North Sea plaice <i>Pleuronectes platessa</i> L. observed through historical otolith and other legacy datasets			11:55		IIIA_Hunter_06
Closing the life history loop on a fish species with embayment, coastal and oceanic life phases			12:15		IIIA_Jenkins_07
Lunch luminance			12:35		
AFTERNOON PARALLEL SESSION		IIIB	14:00 - 15:40	Auditorium	Moderators P. Wright, K. Hüsey
Combined use of otolith shape, parasites and genetic markers for stock identification of the common dentex (<i>Dentex dentex</i>) around Corsica Island (NW Mediterranean).			14:00		IIIB_Marengo_01
The Baltic cod: A case study for testing stock discrimination based on otolith shape analysis in a mixed stock fishery			14:20		IIIB_Hüsey_02
Otolith shape variation in blue fin tuna from different regions of the North Atlantic: a possible marker of stock origin			14:40		IIIB_Brophy_03
Analysis of phenotypic characteristics of otoliths - resolving stock structure issues for snapper in South Australia.			15:00		IIIB_Fowler_04
Use of otolith quality flags to assess distributional dynamics in Baltic cod stock			15:20		IIIB_Stöera_05
AFTERNOON PARALLEL SESSION		IIIC	14:00 - 15:40	Seminar Room	Moderators C-H. Wang , P. Arechavala
Ecological changes in and recovery of the Ayu population following the tsunami generated by the 2011 Tohoku earthquake			14:00		IIIC_Kawakami_01
Out of sight, out of mind: what can otolith microstructure tell us about the elusive marine dispersive phase of the New Zealand whitebait <i>Galaxias maculatus</i> ?			14:20		IIIC_Egan_02
Pelagic larval duration and growth of early life stages of a coral reef fish: variations in an upwelling South Caribbean area			14:40		IIIC_Herrera-Reveles_03
Interpopulation and individual variation in dispersal characteristics of juvenile Sockeye Salmon			15:00		IIIC_Freshwater_04

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Are larval reef fish travelling in packs? Using otoliths to evaluate evidence for shared dispersal histories.		15:20		IIIC_Shima_05
Coffee core		15:40	Poster Room	
AFTERNOON PARALLEL SESSION	IIIB	16:10 - 17:30	Auditorium	Moderators E. Moksness , A.O. Thomas
Stable isotope otolith fingerprint signatures: a mass marking technique for farmed Atlantic salmon <i>Salmo salar</i>		16:10		IIIB_Warren-Myers_06
Stable nitrogen isotopes in otoliths discriminate juvenile fish stocks in estuaries affected by anthropogenic impacts		16:30		IIIB_Lauchlan_07
Population Mixing between U.S. King Mackerel Stocks Estimated with Otolith Chemical Signatures		16:50		IIIB_Patterson_08
European flounder life history plasticity: paranormal activity or the helpful insights of otolith microchemistry?		17:10		IIIB_Morais_09
AFTERNOON PARALLEL SESSION	IIIC	16:10 - 17:30	Seminar Room	Moderators M. Palmer, B. Morales
Dispersal capacities of Allis Shad (<i>Alosa alosa</i>) under global change: insights of innovative otolith microchemistry analysis		16:10		IIIC_Martin_06
Investigating early stages dispersal using otolith chemistry: surprising relevance of the post-settlement phase in a temperate coastal fish.		16:30		IIIC_Di Franco_07
Assessing fish population connectivity: Combining otolith geochemistry and biophysical models		16:50		IIIC_Tanner_08
Estimating potential nursery sources for red snapper, <i>Lutjanus campechanus</i> , populations in Atlantic Ocean waters of the United States from North Carolina to Florida		17:10		IIIC_Barnett_09
OTOCHUKI	IIID & IVD	17:45 - 19:05	Auditorium	Moderator R. Vasconcelos
Are relationships between fish length and otolith radius enhanced by accounting for correlated errors? Implications for back-calculation.		17:45		IVD_Ashworth_01
Variability of the otolith growth rate and age of young-of-the-year chub, <i>Squalius cephalus</i> , from a hydraulic reach in the Rhône River.		17:50		IVD_Morat_02
Investigations into the age determination and validation of patagonian toothfish (<i>Dissostichus eleginoides</i>) from British Overseas Territories		17:55		IVD_Etherton_03
Age, growth and distribution of the Antarctic fish <i>Pseudochaenichthys georgianus</i> NORMAN, 1939 in the Atlantic sector of Antarctic		18:00		IVD_Traczyk_04
Realizing connectivity- the influence of early life history on the dynamics of marine metapopulations		18:05		IIID_Swearer_05
Using the strontium isotope composition of otoliths from Bering cisco (<i>Coregonus laurettae</i>) to determine commercial stock composition in Alaska		18:15		IIID_Padilla_06
Morphometric analysis of yellowfin tuna (<i>Thunnus albacares</i>) otoliths in the western equatorial Atlantic Ocean		18:20		IIID_Batista da Silva_07
Competency phase affects patterns of fish early life traits		18:25		IVD_Calò_08
Residence depth of the deep-sea fish revealed by stable isotope file		18:30		IVD_Shiao_09

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Use of otolith macrostructure for the identification of yearly birthday groups of European hake (<i>Merluccius merluccius</i>)	18:35	IIID_Carbonara_10
Outline variability of the saggita otoliths of the Patagonian grenadier (<i>Macruronus magellanicus</i>) in Chilean Patagonian waters	18:40	IIID_Cubillos_11
Fishery-dependent sampling may bias growth estimates	18:45	IIID_Morro_12
Life history Ba:Ca profiles reveal plasticity in the early life of the diadromous fish (<i>Centropomus undecimalis</i>)	18:50	IIID_Rolls_13
Daily age estimation of Japanese eel <i>preleptocephali</i> collected in the spawning area	19:00	IIID_Mochioka_15
Friday, 24th October		
MORNING PLENARY SESSION	IVA	9:00 - 12:35 Auditorium
		Moderators B. Morales-Nin, G. Petursdottir
Keynote Theme IV: Individual indicators		9:00 Auditorium
		IVA Grønkjær_Key (E. Moksness speaker presentation)
A multi-proxy approach for estimating estuarine immigration using otolith elements and tissue-specific stable isotopes	9:45	IVA_Mohan_01
Image-enhanced burns, bomb radiocarbon and microsatellite DNA improve the accuracy and precision of otolith-based age determinations for redfish (<i>Sebastes</i> spp)	10:05	IVA_Campana_02
Does the elemental composition of marine fish blood and otoliths reflect ambient conditions or physiology? Insights from the lab and the ocean	10:25	IVA_Sturrock_03
Coffee Antirostrum	10:45	Poster Room
Maternal contribution process of Trace Elements in Striped Bass Otoliths During Early Ontogeny	11:15	IVA_Elking_04
Using otoliths to link population abundance decline to modifications in individual trophic niche and growth in a tropical fish species (<i>Bairdiella chrysoura</i> L., Sciaenidae)	11:35	IVA_Sirot_05
Less-than-daily growth increment formation in fish larvae otoliths: Exploring mechanisms with a bioenergetic modelling approach applied to Atlanto-Iberian sardine (<i>Sardina pilchardus</i>)	11:55	IVA_Pecquerie_06
Chemical signatures in scales reveal estuarine habitat use and trophic shifts of a highly migratory elopiform	12:15	IVA_Seeley_07
Lunch zone	12:35	
AFTERNOON PARALLEL SESSION	IVB	14:00 - 15:40 Auditorium
		Moderators A .Fowler, C. Myrilineou
	14:00	
Dietary transmission of isotope spikes to otoliths, fin rays and scales: experimental validation and concentration-dependent mixing models	14:20	IVB_Walther_02
Sr isotope pattern deconvolution of LA-MC ICP-MS data to detect individual-specific transgenerational marks in freshwater fish otoliths	14:40	IVB_Irrgeher_03

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Growth of stocked, marked eels compared to natural recruits in different habitats—a “common garden” approach	15:00	IVB_Wickström_04
Effects of temperature and ration on the otolith to body size relationship in juvenile Chinook salmon: A test of the direct proportionality assumption.	15:20	IVB_Stormer_05
AFTERNOON PARALLEL SESSION	IVC	14:00 - 15:40
	Seminar Room	Moderators S. Thorrold, A. Darnaude
Natal signatures in the calcified structures of the giant Australian cuttlefish: comparing statoliths and cuttlebones	14:00	IVC_Woodcock_01
How long is the lifespan of European hake in the Mediterranean? Validating longevity	14:20	IVC_Vitale_02
Combining otolith microchemistry and microstructure analyses to infer transpacific migration patterns in juvenile Pacific bluefin tuna (<i>Thunnus orientalis</i>)	14:40	IVC_Baumann_03
Temperature history estimated with oxygen isotopes in otoliths of the Japanese common conger Conger myriaster collected from the continental shelf in the East China Sea.	15:00	IVC_Kawazu_04
Investigating diet and movement of cod (<i>Gadus morhua</i>) off Newfoundland using $\delta^{13}C$ of muscle and otolith amino acids	15:20	IVC_Piercey_05
Coffee Postrostrum	15:40	Poster Room
AFTERNOON PARALLEL SESSION	IVB	15:40 - 17:20
	Auditorium	Moderators L. Worsøe Clausen, D. Brophy
Assessment of otolith morphometrics as proxies for age in F-based assessments of tropical deepwater fisheries	16:10	IVB_Williams_06
Does diet influence otolith shape?	16:30	IVB_Mille_07
Otolith shape differences related to different migrating behavior in Icelandic cod tagged by Data Storage Tags	16:40	IVB_Bardarson_08
Otolith shape fluctuating asymmetry: A misconception of its biological relevance?	17:00	IVB_Díaz-Gil_09
AFTERNOON PARALLEL SESSION	IVC	15:40 - 17:20
	Seminar Room	Moderators A. Folkvord, C. G. Piñeiro
Otolith examination in the seahorse <i>Hippocampus guttulatus</i>	16:10	IVC_Valladares_06
New open access software designed for the recognition of daily microstructures used in ageing sympatric hake species	16:30	IVC_Nava_07
Disentangling the effects of inherent otolith growth and model-simulated ecosystem parameters on the daily growth rate of young anchovies	16:40	IVC_Schismenou_08
Non-linear back-calculation in juvenile Baltic sprat (<i>Sprattus sprattus</i>): Insights into a recruitment-critical life stage	17:00	IVC_Günther_09
OTOCHUKI	IVD	17:30 - 18:45
	Auditorium	Moderator P. Gaemers
A New Era of Ageing Spiny Dogfish (<i>Squalus suckleyi</i>) in the North Pacific Ocean	17:30	IVD_Tribuzio_01
Age structure of the goby <i>Parapocryptes serperaster</i> in the Mekong Delta, Vietnam, based on length-frequency and otolith analyses	17:35	IVD_Dinh_02

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Changes in size, shape and appearance of juvenile Northeast Arctic cod (<i>Gadus morhua</i>) otoliths during settling	17:40	IVD_Irgens_03
Post-settlement growth of hake from the Norwegian coast based on otolith microstructure analysis: Evidence for counter gradient variation?	17:45	IVD_Staby_05
Colonization, hatch-dates, and growth rates of juvenile <i>Hyporhamphus picarti</i> (Actinopterygii, Hemiramphidae), in the Nador lagoon (NE Morocco)	17:50	IVD_Jaafour_06
Determination of strontium chemical environment and elemental mapping of otoliths by synchrotron radiation techniques	17:55	IVD_Dufour_07
Past and recent growth patterns in two species with contrasting demographic responses to environmental changes in a tropical lagoon	18:00	IVD_Sirot_08
The validation of otolith traceability tools within a robust, reproducible and transferable forensic framework	18:05	IIID_Geffen_10
Age and growth of larval Atlantic bluefin tuna, <i>Thunnus thynnus</i> , from the Gulf of Mexico	18:10	IVD_Malca_09
Shape analysis of sagittal otolith of <i>Haemulon plumierii</i> caught in Pernambuco State (Brazil): ontogenetic and population perspectives	18:15	IVD_Vasconcelos Filho_10
Larval Otolith Formation in Striped Bass (<i>Morone saxatilis</i>)	18:20	IVD_Elking_11
Using otolith strontium isotopes to reconstruct life history portfolios within salmon populations: When do different phenotypes contribute?	18:25	IVD_Sturrock_12
Migration patterns and population structure of two small pelagic species from otolith microchemistry: European anchovy (<i>Engraulis encrasicolus</i>) and Sardine (<i>Sardina pilchardus</i>) of the Bay of Biscay	18:30	IIID_Gatti_13
Contribution of otolith microchemistry to reveal the evolutionary origin of catadromous migration in anguilliformes fishes: an example of tropical moray eel	18:35	IVD_Kuroki_14
Age estimation and otolith analysis of <i>Fistularia commersonii</i> Rüppell, 1838 (Syngnathiformes – <i>Fistularia</i>) in the central Mediterranean Sea	18:40	IVD_Vitale_16
Otolith microchemistry: A useful tool for age validation?	18:45	IVD_Hüssy_17
Can we derive a deep water $\delta^{14}\text{C}$ curve to aid age validation of NZ deep sea fish species?	18:50	IVD_Neil_18
SYMPOSIUM CLOSING SESSION	19:15	Auditorium
Demons - "A little asymmetry goes a long way"	19:30	Casal Grounds
GALA DINNER: Hard Rock Story's happily ever-afters	20:00	Hotel Palmira Beach