20TH INTERNATIONAL RADIOCARBON CONFERENCE
May 31 to June 5, 2009 | Big Island, Hawaii

Plenary Session 1. Radiocarbon and Archaeology
Monday, 1 June 830am Keauhou II.

Chairs: W. Kutschera and T. Higham

#1	Tom Higham	Radiocarbon dating the dispersal of the first anatomically modern humans into western Europe	830am
#2	Katerina Douka	Radiocarbon dating of the first European modern humans: new direct AMS dates of Aurignacian shell ornaments	850am
#3	Stuart Fiedel (Presenter: *Yaroslav Kuzmin*)	Is more precise dating of Paleoindian expansion feasible?	910am
#4	Rachel Wood	The impact of new radiocarbon pretreatment techniques for understanding the Iberian Middle to Upper Paleolithic transition	930am
#5	Anvar Shukurov	On the accuracy of radiocarbon dating for the Neolithic	950am

Plenary Session 2. Calibration
Tuesday, 2 June 830am Keauhou II.

Chairs: P. J. Reimer and T. Guilderson

#6	Bernd Kromer	^{14}C calibration in the 2nd and 1st millennium BC - Eastern Mediterranean Radiocarbon Comparison Project	830am
#7	Warren Beck	Comparison of terrestrial and marine archive $\Delta^{14}C$ variation during marine isotope stage 3	845am
#8	Richard Staff	Suigetsu 2006: a wholly terrestrial radiocarbon calibration curve	900am
#9	Alan Hogg	Assessment of the integrity of the Southern Hemisphere ^{14}C calibration curve and its extension from AD 785 to 195 BC, with particular emphasis on the interhemispheric offset	915am
#10	Christopher Bronk Ramsey	Developments in the calibration and modeling of radiocarbon dates	930am
#11	Paula Reimer	Progress in the extension and update of the IntCal04, Marine04, and SHCal04 radiocarbon calibration curves	945am

Plenary Session 3. First Detection of Radiocarbon Using AMS: A Retrospective
Thursday, 4 June 830am Keauhou II.

Chairs: J. Southon

	Walter Kutschera	A Tribute to Harry Gove (1922–2009)	830am
#12	Richard Muller	First AMS measurements using a cyclotron - a review	845am
#13	Erle Nelson	Ancient AMS: development of AMS at McMaster University	915am

Plenary Session 4. Intercomparisons
Friday, 5 June 830am Keauhou II.

Chairs: C. Bronk Ramsey and E. M. Scott

#14	Philip Naysmith (Presenter: *Marian Scott*)	The radiocarbon intercomparison (VIRI): (Part 1) the final stage	830am
#15	Marian Scott	The radiocarbon intercomparison (VIRI): (Part 2) an overall assessment of laboratory performance	850am
#16	Sahra Talamo	AMS sample comparison close to the limit of the method: a limit or challenge?	910am
#17	Martin Suter	Are universal compact AMS facilities a competitive alternative to larger tandem accelerators?	930am

Plenary Session 5. Business Meeting
Friday, 5 June 1030am Keauhou II.

Chair: T. Jull

Timothy Jull	Radiocarbon Conference summary	1030am
	Presentation of proposals for next conference	1045am
	Other business	
	Meeting adjourns	12noon

Parallel Session 2-1. Bone Dating and Chemistry
Monday, 1 June 1030am Keauhou II.

Chair: M. van Stryndonck and G. Hodgins

#18	Mark Van Strydonck	The carbon origin of structural carbonate in bone apatite of cremated bones	1030am
#19	Anat Marom	Development of a new analytical method for radiocarbon dating bones using the amino acid hydroxyproline	1045am
#20	Alexander Cherkinsky	Radiocarbon age of bone fractions from underwater-collected gray whale bones, JY reef, offshore Georgia, USA	1100am
#21	Árný Sveinbjörnsdóttir	Dietary reconstruction and reservoir correction of ^{14}C dates on bones from pagan and early Christian graves from Iceland	1115am
#22	Matthias Huels	Experimental study on the origin of cremated bone apatite carbon	1145am
#23	Jesper Olsen	Dietary habits and freshwater reservoir effects in bones from a Neolithic northern German cemetery	12noon

Parallel Session 3-1. Radiocarbon & AMS – Small and Large I
Monday, 1 June 1030am Keauhou III.

Chair: Y. Yokoyama and W. Kretschmer

#24	Lukas Wacker	MICADAS: routine and high-precision radiocarbon dating	1030am
#25	Keith Fifield	Two years of SSAMS at ANU	1045am
#26	Wan Hong	A new 1 MV AMS facility in KIGAM (Korea)	1100am
#27	Yusuke Yokoyama	Developing ultra small-scale radiocarbon sample measurement at MALT AMS, Tokyo University	1115am
#28	Steinar Gulliksen	Status report for the AMS facility in Trondheim	1130am
#29	Wolfgang Kretschmer	The Erlangen AMS facility: status, applications, and the prospect of ^{14}C measurements of microgram samples	1145am

Parallel Session 2-2. Pacific Studies
Monday, 1 June 130pm Keauhou II.

Chair: Q. Hua and G. Burr

#30	Kunio Omoto	Calibrated radiocarbon ages of Jomon Iseki, NE Japan, and their significance	130pm
#31	Fiona Petchey	The impact of ocean boundaries and island chains on shell ^{14}C determinations: known-age and archaeological ΔR examples from the Bismarck Sea and Hawaiian Islands	145pm
#32	Quan Hua	Late Holocene ΔR values for Hawaii derived from U-Th dated archaeological corals	200pm
#33	Jamie Wood	*Sporormiella* and the New Zealand avifaunal extinctions	215pm
#34	Allen Andrews	Bomb radiocarbon dating of white abalone (*Haliotis sorenseni*): investigations of age, growth, and lifespan	230pm

Parallel Session 3-2. Radiocarbon & AMS – Small and Large II
Monday, 1 June 130pm Keauhou III.

Chair: W. Kieser and A. Zondervan

#35	Bernd Kromer	Dating MICADAS at the new AMS laboratory at CEZA, Mannheim, Germany	130pm
#36	Timothy Jull	Radiocarbon and radionuclide studies using 2 AMS machines: advantages and complications	145pm
#37	William Kieser	The low-energy isobar separator for anions – progress report	200pm
#38	Francesco Taccetti (Presenter: *Mariaelena Fedi*)	A beam profile monitor for rare isotopes in AMS measurements	215pm
#39	He Ming	ΔE-Q3D isobar identification method in AMS measurement	230pm

Parallel Session 2-3. Archaeological Applications
Monday, 1 June 330pm Keauhou II.

Chair: T. Nakamura

#40	Mariaelena Fedi	The Artemidorus papyrus: solving an ancient puzzle with radiocarbon and ion beam analysis measurements	330pm
#41	Gregory Hodgins	Marco Polo and the discovery of the Americas: radiocarbon dating the Rossi Map-with-Ship	345pm
#42	Toshio Nakamura	Early Bronze Age chronology deduced from radiocarbon ages of remains from Tell Ghanem al-Ali site, Raqqa, Syria	400pm
#43	Michael Dee	A new ^{14}C chronology for New Kingdom Egypt	415pm
#44	Mohammed Mahran	Dating the collapse of the funerary temple of Amenhotep III at Luxor West Bank, Egypt	430pm

Parallel Session 3-3. Bayesian Analysis and Databases
Monday, 1 June 330pm Keauhou III.

Chair: A. Bayliss

#45	Franz Weninger	Robust Bayesian analysis, an attempt to improve Bayesian sequencing	330pm
#46	Vesa Palonen	Using CAR4AMS, the Bayesian AMS data-analysis code	345pm
#47	Peter Becker-Heidmann	A new attempt to establish the International Radiocarbon Soils Data Base (IRSDB)	400pm
#48	Antun Portner (Presenter: *Bogomil Obelic)*	ZAGRADA – the new Zagreb Radiocarbon Database	415pm
		Discussion	430pm

Parallel Session 2-4. Marine Studies
Tuesday, 2 June 1030am Keauhou II.

Chair: C. Hatté and F. Petchey

#49	Vladimir Levchenko	An improved radiocarbon chronology for MD-982167, eastern Indian Ocean: synchronizing paleomagnetic intensity and ^{10}Be across the Laschamp event	1030am
#50	Nicola Russell	Spatial variation in the MRE throughout the Scottish Post-Roman to Late Medieval period: North Sea values (500–1350 BP)	1045am
#51	Christine Hatté (Presenter: *Tim Jull*)	Marine chronology based on ^{14}C dating on diatoms proteins	1100am
#52	Karl von Reden	Radiocarbon and the ocean sciences – contributions from a dedicated ^{14}C AMS facility	1115am
#53	N. Tisnérat-Laborde	Relation between sea surface variability of Northeast Atlantic $\Delta^{14}C$ and the North Atlantic Oscillation	1130am
#54	Koushik Dutta (Presenter: *Ravi Prasad*)	Decadal changes of radiocarbon in the surface Bay of Bengal: three decades after GEOSECS and one decade after WOCE	1145am

Parallel Session 3-4. Calibration and Calculation
Tuesday, 2 June 1030am Keauhou III.

Chair: G. S. Burr and W. Zhou

#55	Susan Zimmerman	Extension of the Southern Hemisphere radiocarbon curve in Tasmanian pine, 955-2200 yr BP	1030am
#56	Yui Takahashi	Comparison of ^{14}C ages between LSC and AMS measurements for Choukai Jindai cedar tree rings at the rapid change in 2600 cal BP	1045am
#57	Won-Kyu Park	Tree-ring dating and AMS wiggle-matching of wooden statues in Korea	1100am
		Discussion	1115am

Parallel Session 2-5. Radionuclide Tracers
Tuesday, 2 June 130pm Keauhou II.

Chair: P. Povinec and N. Tisnerat-Laborde

#58	Mario De Cesare	Measurements of actinides at CIRCE in Caserta (Italy)	130pm
#59	Jocelyn Turnbull	Quantification of fossil fuel CO_2 emissions from East Asia using atmospheric observations of $\Delta^{14}CO_2$	145pm
#60	Mihaly Molnár	Atmospheric fossil fuel CO_2 record in a central European city during the winter of 2008/09	200pm
#61	KJ Kim	C/N ratio and radiocarbon as tracers for study of an oil-spilled coastal area, Taean in Korea	215pm
#62	Pavel Povinec	Radiocarbon and other global fallout radionuclides in Indian Ocean waters	230pm
		Discussion	245pm

Parallel Session 3-5. Eurasian Archaeology I
Tuesday, 2 June 130pm Keauhou III.

Chair: Y. V. Kuzmin and X. Wu

#63	Shinya Shoda	What has changed because of the Yayoi dating controversy?	130pm
#64	Yaroslav Kuzmin	The origin of pottery in East Asia and its relationship to environmental changes in the Late Glacial: who came first, the chicken or egg?	145pm
#65	Susan Keates	The age of early *Homo sapiens* in China	200pm
#66	Esmée Webb	The effect of accuracy and precision on attempts to date the first peopling of Sahul radiometrically	215pm
#67	J-C Kim	Radiocarbon dates documenting the Neolithic-Bronze Age transition in Korea	230pm
#68	Christopher J. Norton	The Late Paleolithic-Neolithic transition in Korea: current archaeological and radiocarbon perspectives	245pm

Parallel Session 2-6. Soils and Sediments
Tuesday, 2 June 330pm Keauhou II.

Chair: J. Pigati and R. Bhushan

#69	Brad Rosenheim	Overview of ramped pyrolysis radiocarbon dating and application to carbon cycling and chronology	330pm
#70	Nada Horvatinčić	Exchange processes of carbon isotopes ^{14}C and ^{13}C in the karst environment	345pm
#71	Christine Hatté (Presenter: *Tim Jull*)	Dating human occupation on diatom-phytolith-rich sediment: study case Mustang Spring and Lubbock Lake, Texas, USA	400pm
#72	Atte Korhola	Radiocarbon-estimated rates of northern peatland expansion and their significance to the Late Holocene rise of atmospheric methane	415pm
#73	Ravi Bhushan	Sediment mobilization in the Bay of Bengal during LGM to Holocene transition	430pm
#74	Jeff Pigati	Radiocarbon dating of small terrestrial gastropods in North America	445pm

Parallel Session 3-6. Eurasian Archaeology II
Tuesday, 2 June 330pm Keauhou III.

Chair: L. P. Zhou and E. Boaretto

#75	Yuichiro Kudo	Radiocarbon chronology of the earliest pottery and environmental changes during the Late Glacial in eastern Japan	330pm
#76	Xiaohong Wu (Presenter: *Zhiyu Guo*)	Radiocarbon dating of the Guchengzhai site in central China	345pm
#77	Minoru Sakamoto	Precise chronology of prehistoric Japan by combination of radiocarbon dating and pottery typology	400pm
#78	Yoshiki Miyata	The origin of millet cultivation in Japan: comparison with irrigated rice cultivation	415pm
#79	YY Li (Presenter: *Liping Zhou*)	AMS ^{14}C dating of plant remains from archaeological sites in the Western Liaohe River Basin, northeastern China	430pm
#80	Elisabetta Boaretto	Radiocarbon dating of charcoal and bone collagen associated with early pottery at Yuchanyan Cave, Hunan Province, China	445pm
		Discussion	500pm

Parallel Session 2-7. Freshwater and Groundwater
Thursday, 4 Jun 1030am Keauhou II.

Chair: F. Nara and L. Calcagnile

#81	Pauline Gulliver	Effect of storage on the radiocarbon and stable carbon and nitrogen isotopic signatures in riverine DOM	1030am
#82	Philippa Ascough	Freshwater reservoir effects in an Icelandic ecosystem	1045am
#83	Fumiko Nara	High contribution of recalcitrant organic matter to dissolved organic carbon (DOC) in Japanese oligotrophic lake revealed by radiocarbon measurements	1100am
#84	Seiya Nagao	Variations in $\Delta^{14}C$ of POC in waters from the Upper to Lower Ishikari River	1115am
#85	Evelyn Keaveney	Radiocarbon reservoir corrections for freshwater fish in Britain and Ireland	1130am

Parallel Session 3-7. ^{14}C Methods Including Archaeological Dating
Thursday, 4 Jun 1030am Keauhou III.

Chair: J. Heinemeier and I. Hajdas

#86	Jan Heinemeier	Successful AMS ^{14}C dating of non-hydraulic lime mortars from the medieval churches of the Åland Islands	1030am
#87	Lior Regev	Lime plaster, mortar, and wood ash: materials characterization and potential for radiocarbon dating	1045am
#88	Gordon Cook	High-precision radiocarbon dating of the primary construction phase of Oakbank crannog, Loch Tay, Perthshire	1100am
#89	Katerina Douka	Improved AMS radiocarbon dating of shell carbonates using high-precision XRD and density separation	1115am
#90	Jang-Sik Park	A thermal and acid treatment for carbon extraction from cast iron and its application to AMS dating of cast iron objects from ancient Korea	1130am

Parallel Session 4-1. Workshop on ^{14}C sample preparation
Thursday, 4 Jun 1030am Mauna Kea room

Chair: J. Turnbull

1030am-12noon	Bring your real data and sample preparation problems and we will discuss them in an informal setting.

Parallel Session 2-8. Paleoclimate Applications
Thursday, 4 Jun 130pm Keauhou II.

Chair: E. Druffel and J. W. Beck

#91	Weijian Zhou	Is Early Holocene Optimum time-transgressive in the Monsoon China?: evidence from high-resolution peat record	130pm
#92	Naama Avrahamov	Characterization and dating of saline groundwater in the Dead Sea area	145pm
#93	Kyeong Ja Kim	Preliminary study of paleoclimate change of the Laguna Potroke Aike using authigenic Be Isotopes	200pm
#94	Emi Okuno	Paleoenvironment and AMS radiocarbon dating based on Insect Fossils from the archaeological sites in Japan	215pm
#95	Sergey Krivonogov (Presenter: *G S Burr*)	Environmental changes of the Aral Sea (Central Asia) in the Holocene: major trends	230pm
#96	Mariah Izar Francisquini (Presenter: *Luiz Pessenda*)	Late Pleistocene vegetation reconstruction of coastal forest - grassland mosaic at Serra do Mar State Park, Southeastern Brazil	245pm

Parallel Session 3-8. ^{14}C Methods and Chemistry
Thursday, 4 Jun 130pm Keauhou III.

Chair: G. Cook and A. Cherkinsky

#97	Lukas Wacker	How to measure small samples with a gas ion source	130pm
#98	Philippa Ascough	Hydropyrolysis: implications for radiocarbon pretreatment and black carbon quantification	145pm
#99	Jennifer Tripp	A new pretreatment method for molluscan shell using density fractionation of carbonates in bromoform	200pm
#100	Mojmir Němec	Optimization of the automated graphitization system AGE-1	215pm
#101	Andrew Smith (Presenter: *Bin Yang*)	Laser-heated microfurnace: gas analysis & graphite morphology	230pm

Parallel Session 2-9. How Accurately Can We Use Radiocarbon Dating?
Thursday, 4 Jun 330pm Keauhou II.

Chair: J. van der Plicht

#102	Asya Engovatova (Presenter: *Ganna Zaitseva*)	Methodological issues of dating historical events	330pm
#103	Alex Bayliss	Taking the 'pre' out of prehistory: a narrative for the early centuries of the Neolithic in Britain and Ireland	350pm
#104	Elisabetta Boaretto	Radiocarbon dating for sub-century chronological differences: the analytical and archaeological insights	410pm
		Discussion	430pm

Parallel Session 3-9. ^{14}C Methods and Chemistry II
Thursday, 4 Jun 330pm Keauhou III.

Chair: A. McNichol

#105	Wan Hong	Development of an automated reduction system for AMS sample preparation	330pm
#106	Junghun Park	Simple pretreatment method of iron and carbonate samples	345pm
#107	Haiwei Shen (Presenter: *Ann McNichol*)	Initial measurements of radiocarbon in atmospheric formaldehyde at Narragansett, Rhode Island, USA	400pm
		Discussion	415pm