

A. Kuijpers, B.A. Malmgren and M.-S. Seidenkrantz

- Andrews, J.T., Smith, L.M., Preston, R., Cooper, T. and Jennings, A.E., 2003: Spatial and temporal patterns of iceberg rafting (IRD) along the East Greenland margin, ca. 68°N, over the last 14 cal. Ka, *Journal of Quaternary Science*, **12**: 1-13.
- Bakke, J., Lie, Ø., Dahl, S.O., Nesje, A. and A.E. Bjune, 2008: Strength and spatial patterns of the Holocene wintertime westerlies in the NE Atlantic region, *Global and Planetary Change*, **60**: 28-41.
- Bond, G. et al., 1997: A pervasive millennial-scale cycle in North Atlantic Holocene and glacial climates, *Science*, **278**: 1257-1266.
- Broecker, W.S., 2000: Was a change in thermohaline circulation responsible for the Little Ice Age? *Proceedings of the National Academy of Sciences USA*, **97**: 1339-1342.
- Broecker, W.S., 2001: Was the Medieval Warm Period global? *Science*, **291**: 1497-1499.
- Crowley, T.J., 2000: Causes of Climate Change Over the Past 1000 Years, *Science*, **289**: 270-277.
- Dahl K.A., Broccoli A.J. and Stouffer R.J., 2005: Assessing the role of North Atlantic freshwater forcing in millennial scale climate variability: a tropical Atlantic perspective, *Climate Dynamics*, **24**: 325-346
- Hanna, E. and Cappelen, J., 2003: Recent cooling in coastal southern Greenland and relation with the North Atlantic Oscillation, *Geophysical Research Letters*, **30**(3): doi: 10.1029/2002GL015797.
- Jennings, A. and Weiner, N.J., 1996: Environmental change in eastern Greenland during the last 1300 years: evidence from foraminifera and lithofacies in Nansen Fjord, 68°N, *The Holocene*, **6**(2): 179-191.
- Jensen, K.G., 2003: Holocene hydrographic changes in Greenland coastal waters, PhD-thesis, *Geological Survey of Denmark and Greenland (GEUS) Report 2003/58*: 1-160.
- Kaspar, J.N. and Allard, M., 2001: Late-Holocene climatic changes as detected by the growth and decay of ice wedges on the southern shore of Hudson Strait, northern Québec, Canada, *The Holocene*, **11**(5): 563-577.
- Lassen, S.J., Kuijpers, A., Kunzendorf, H., Hoffmann-Wieck, G., Mikkelsen, N. and Konradi, P., 2004: Late Holocene bottom-water variability in Igalko fjord, South Greenland, reconstructed from foraminifera faunas, *The Holocene*, **14**(2): 165-171.
- Levitus, S., Antonov, J.I. and Boyer, T.P., 1994: Interannual variability of temperature at a depth of 125 meters in the North Atlantic Ocean, *Science*, **266**: 96-99.
- Malmgren, B.A., Winter, A. and D. Chen, 1998: El Niño-Southern Oscillation and North Atlantic Oscillation control of climate in Puerto Rico, *American Meteorological Society Notes and Correspondence*, October 1998: 2713-2717.
- Malmgren, B.A., Kucera, M., Waelbroeck, C. and Nyberg, J., 2001: Comparison of statistical and artificial neural network techniques for estimating past sea-surface temperatures from planktonic foraminifer census data, *Paleoceanography*, **16**: 520-530.
- Mauritzen, C. and Häkkinen, S., 1997: Influence of sea ice on the thermohaline circulation in the Arctic-North Atlantic Ocean, *Geophysical Research Letters*, **24**: 3257-3260.
- Metcalf, W.G., 1976: Caribbean-Atlantic exchange through the Anegada-Jungfern Passage, *Journal of Geophysical Research*, **81**: 6401-6409.
- Mohtadi, M., Romero, O.E., Kaiser, J. and D. Hebbeln, 2007: Cooling of the southern high latitudes during the Medieval Period and its effect on ENSO, *Quaternary Science Reviews*, **26**(7-8): 1055-1066.
- Møller, H.S., Jensen, K.G., Kuijpers, A., Aagaard-Sørensen, S., Seidenkrantz, M.-S., Prins, M., Endler, R. and Mikkelsen, N., 2006: Late Holocene environment and climatic changes in Ameralik Fjord, southwest Greenland: evidence from the sedimentary record, *The Holocene*, **16**(5): 685-695.
- Pflaumann, U. et al., 2003: Glacial North Atlantic sea-surface conditions reconstructed by GLAMAP 2000, *Paleoceanography*, **18**(3): doi:10.1029/2002PA000774.
- Seidenkrantz, M.-S., Aagaard-Sørensen, S., Sulsbrück, H., Kuijpers, A., Jensen, K.G. and Kunzendorf, H., 2007: Hydrography and climate of the last 4400 years in a SW Greenland fjord: implications for Labrador Sea palaeoceanography, *The Holocene*, **17**(3): 387-401.
- Seidenkrantz, M.-S., Roncaglia, L., Fischel, A., Heilmann-Clausen, C., Kuijpers, A. and Moros, M. 2008: Variable North Atlantic climate seesaw patterns documented by a late Holocene marine record from Disko Bugt, West Greenland, *Marine Micropalaeontology*, **68**: 66-83
doi:10.1016/j.marmicro.2008.01.006

- Shindell, D.T., Schmidt, G.A., Mann, M.E., Rind, D. and Waple, A., 2001: Solar forcing of regional climate change during the Maunder Minimum, *Science*, **294**: 2149-2152.
- Stuiver, M., Grootes, P.M. and Braziunas, T.F., 1995: The GISP2 d¹⁸O climate record of the past 16,500 years and the role of the sun, ocean, and volcanoes, *Quaternary Research*, **44**: 341-354.
- Stuiver, M. et al., 1998: INTCAL98 Radiocarbon age calibration 24,000-0 cal BP, *Radiocarbon*, **40**: 1041-1083.
- Wüst, G., 1964: *Stratification and circulation in the Antillean-Caribbean Basins*, Columbia University Press, New York, 1-201.

F. Sangiorgi, A. Sluijs, J. Barke and H. Brinkhuis

- Backman J., et al., 2008: Age Model and Core-Seismic Integration for the Cenozoic ACEX Sediments from the Lomonosov Ridge, *Paleoceanography*, **23**: PA1S03, doi:10.1029/2007PA001476
- Brinkhuis, H., et al., 2006: Episodic fresh surface water in the Eocene Arctic Ocean, *Nature*, **441**: 606-609.
- Bujak, J.P. and Mudge, D.C., 2004: A high-resolution North Sea Eocene dinocyst zonation, *Journal of the Geological Society of London*, **151**: 449—462.
- Darby, D.A., 2008: Arctic perennial ice cover over the last 14 million years, *Paleoceanography*, **23**: PA1S07, doi:10.1029/2007PA001479
- Expedition 302 Scientists, 2006: Sites M0001–M0004. In: Backman, et al., (Eds) *Proceedings of the IODP, 302: Edinburgh, Integrated Ocean Drilling Program Management International*, doi:10.2204/iodp.proc.302.104.2006
- Glebovsky, V.Y., Kaminsky, V.D., Minakov, A.N., Merkuriev, S.A., Childers, V.A. and Brozena, J.M., 2006: Formation of the Eurasia Basin in the Arctic Ocean as inferred from geohistorical analysis of the anomalous magnetic field, *Geotectonics*, **40**(4): 263–281.
- Huber, M. and Nof, D., 2006: The ocean circulation in the Southern Hemisphere and its climatic impacts in the Eocene, *Paleogeography, Palaeoclimatology, Palaeoecology*, **231**: 9-28
- Jakobsson, M., Cherkis, N., Woodward, J., Macnab, R. and Coakley B., 2000: New grid of Arctic bathymetry aids scientists and mapmakers, *Eos Transactions, American Geophysical Union*, **81**: 89.
- Jakobsson M. et al., 2007: The Early Miocene Onset of a Ventilated Circulation Regime in the Arctic Ocean, *Nature*, **447**: 986-990.
- Krylov, A.A., Andreeva, I.A., Vogt, C., Backman, J., Krupskaya, V.V., Grikurov, G.E., Moran, K., and Shoji H., 2008: A shift in heavy and clay mineral provenance indicates a middle Miocene onset of a perennial sea ice cover in the Arctic Ocean, *Paleoceanography*, **23**: PA1S06, doi:10.1029/2007PA001497.
- Moran, K. et al., 2006: The Cenozoic palaeoenvironment of the Arctic Ocean, *Nature*, **441**: 601-605.
- O'Regan M. et al., 2008: Mid-Cenozoic Tectonic and Paleoenvironmental Setting of the Central Arctic Ocean, *Paleoceanography*, **23**: PA1S20, doi:10.1029/2007PA001559
- Pagani M. et al., 2006: Arctic hydrology during global warming at the Paleocene/Eocene thermal maximum, *Nature*, **442**: 671-675.
- Sangiorgi, F., et al., 2008a: A 26 million year gap in the central Arctic record at the Greenhouse-Icehouse transition: Looking for clues, *Paleoceanography*, **23**: PA1S04, doi:10.1029/2007PA001477
- Sangiorgi, F. et al., 2008b: Cyclicity in the middle Eocene central Arctic Ocean sediment record: orbital forcing and environmental response, *Paleoceanography*, **23**: PA1S08, doi:10.1029/2007PA001487
- Sangiorgi, F., Brinkhuis, H. and Damassa, S.P. 2008c, in press: *Arcticacysta* gen. nov.: A new organic-walled dinoflagellate cyst genus from the early Miocene of the central Arctic Ocean, *Micropaleontology*.
- Schouten S., Woltering M., Rijpstra W.I.C., Sluijs A., Brinkhuis H. and Sinninghe Damsté J.S., 2007: The Paleocene-Eocene carbon isotope excursion in higher plant organic matter: Differential stable carbon isotopic fractionation of angiosperms and conifers on the Arctic continent, *Earth and Planetary Science Letters*, **258**: 581-592.
- Sluijs A. et al., 2006: Subtropical Arctic Ocean temperatures during the Paleocene/Eocene thermal maximum, *Nature*, **441**: 610-613
- Sluijs, A., Röhl, U., Schouten, S., Brumsack, H-J., Sangiorgi, F., Sininghe Damsté, J.S. and Brinkhuis, H., 2008: Arctic late Paleocene – Early Eocene paleoenvironments with special emphasis on the Paleocene – Eocene thermal maximum (Lomonosov Ridge, IODP Expedition 302), *Paleoceanography*, **23**: PA1S11, doi:10.1029/2007PA001495

- Speelman, E. et al., 2009 in press: The Eocene Arctic Azolla bloom: environmental conditions, productivity and carbon drawdown, *Geobiology*.
- Spofforth, D.J.A., Pälike H. and Green D., 2008: Palaeogene record of elemental concentrations in sediments from the Arctic Ocean obtained by XRF analyses, *Paleoceanography*, **23**: PA1S09, doi:10.1029/2007PA001489
- Stein, R., Boucsein B. and Meyer H., 2006: Anoxia and high primary production in the Palaeogene central Arctic Ocean: First detailed records from Lomonosov Ridge, *Geophysical Research Letters*, **33**: L18606, doi:10.1029/2006GL026776.
- St. John, K., 2008: Cenozoic ice-rafting history of the central Arctic Ocean: Terrigenous sand on the Lomonosov Ridge, *Paleoceanography*, **23**: PA1S05, doi:10.1029/2007PA001483
- Weijers et al., 2007 Warm arctic continents during the Palaeocene-Eocene thermal maximum, *Earth and Planetary Science Letters*, **261**(1-2): 230-238, doi:10.1016/j.epsl.2007.06.033
- Zachos, J. et al., 2008: An early Cenozoic perspective on greenhouse warming and carbon-cycle dynamics, *Nature*, **451**: 279–283.

D.-D. Rousseau, C. Hatte and I. Tegen

- Andersen, K.K. et al., 2006: The Greenland Ice Core Chronology 2005, 15-42 ka, Part 1: constructing the time scale, *Quaternary Science Reviews*, **25**: 3246-3257.
- GRIP members, 1993: Climate instability during the last interglacial period recorded in the GRIP ice core, *Nature*, **364**: 203-207.
- Petit, J.R. et al., 1999: Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica, *Nature*, **399**: 429-436.
- Porter, S.C. and An, Z.S., 1995: Correlation between climate events in the North Atlantic and China during the last glaciation, *Nature*, **375**: 305-308.
- Rousseau, D.D., Sima, A., Antoine, P., Hatté, C., Lang, A. and Zoeller, L., 2007: Link between European and North Atlantic abrupt climatic changes over the last glaciation, *Geophysical Research Letters*, **34**: doi:10.1029/2007GL031716.
- Steffensen, J.P. et al., 2008: High-resolution Greenland Ice Core data show abrupt climate change happens in few years, *Science*, **321**: 680-684.
- Tada, R., Irino, T. and Koizumi, I., 1999: Land-ocean linkages over orbital and millennial timescales recorded in late Quaternary sediments of the Japan Sea, *Paleoceanography*, **14**: 236-247.

A. Abe-Ouchi and B. Otto-Bliesner

- Abe-Ouchi, A., Segawa, S. and Saito, F., 2007: Climatic Conditions for modelling the Northern Hemisphere ice sheets throughout the ice age cycle, *Climate of the Past*, **3**: 423-438.
- Berger, A., 1978: Long-term variations of caloric insolation resulting from the Earth's orbital elements, *Quaternary Research*, **9**: 139-167.
- Braconnot, P. et al., 2007: Results of PMIP2 coupled simulations of the mid-Holocene and Last Glacial Maximum Part 1: experiments and large-scale features, *Climate of the Past*, **3**: 261-277.
- Broccoli, A.J. and Manabe, S., 1987: The influence of continental ice, atmospheric, CO₂ and land albedo on the climate of the last glacial maximum, *Climate Dynamics*, **1**: 87-99.
- Charbit, S., Ritz, C., Philippon, G., Peyaud, V. and Kageyama, M., 2007: Numerical reconstructions of the Northern Hemisphere ice sheets through the last glacial-interglacial cycle, *Climate of the Past*, **3**: 15-37.
- Clark, P.U., Alley, R.B. and Pollard, D., 1999: Northern Hemisphere Ice-Sheet Influences on Global Climate Change, *Science*, **286**: 1104-1111.
- CLIMAP, 1981: *Seasonal reconstructions of the Earth's surface at the last glacial maximum*, no. MC-36 in Map Chart Series, Geological Society of America, Boulder, Colorado.
- Felzer, B., Oglesby, R.J., Webb, T. III and Hyman, D.E., 1996: Sensitivity of a general circulation model to changes in northern hemisphere ice sheets, *Journal of Geophysical Research*, **101**: 19,077-19,092.
- Jost, A., Lunt, M., Kageyama, M., Abe-Ouchi, A., Peyron, O., Valdes, P. J. and Ramstein, G., 2005: High resolution simulations of the last glacial maximum climate over Europe: a solution to discrepancies with continental paleoclimatic reconstructions? *Climate Dynamics*, **24**: 577-590.

- Krinner, G. and Genthon, C., 1999: Altitude dependence of the ice sheet surface climate, *Geophysical Research Letters*, **26**: 2227--2230.
- Manabe, S. and Broccoli, A.J., 1985: The influence of continental ice sheets on the climate of an ice age, *Journal of Geophysical Research*, **90**: 2167-2190.
- Marshall, S.J., 2005: Recent advances in understanding ice sheet dynamics, *Earth and Planetary Science Letters*, **240**: 191-204.
- Marshall, S.J. and Clark, P.U., 2002: Basal temperature evolution of North American ice sheets and implications for the 100-kyr cycle, *Geophysical Research Letters*, **29**(24): 2214.
- Milankovitch, M., 1930: *Mathematische Klimalehre und Astronomische Theorie der Klimaschwankungen*, Gebruder Bornträger, Berlin.
- Otto-Bliesner, B.L, Brady, E.C., Clauzet, G., Tomas, R., Levis, S. and Kothavala, Z., 2006: Last Glacial Maximum and Holocene Climate in CCSM3, *Journal of Climate*, **19**: 2526-2544.
- Peltier, W.R., 1994: Ice Age Paleotopography, *Science*, **265**: 195-201.
- Peltier, W.R., 2004: Global Glacial Isostasy and the Surface of the Ice-Age Earth, 2004, The ICE-5G(VM2) Model and GRACE, *Annual Review of Earth and Planetary Sciences*, **32**: 111-149.
- Petit, J.R. et al., 1999: Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica, *Nature*, **399**: 429-436.
- Rind, D., 1987: Components of the ice age circulation, *Journal of Geophysical Research*, **92**: 4241-4281.
- Tarasov, L. and Peltier, W.R., 2004: A geophysically constrained large ensemble analysis of the deglacial history of the North American ice-sheet complex, *Quaternary Science Reviews*, **23**: 359-388.
- Yamagishi, T., Abe-Ouchi, A., Saito, F., Segawa, T. and Nishimura, T., 2005: Re-evaluation of paleo-accumulation parameterization over Northern Hemisphere ice sheets during the ice age examined with a high-resolution AGCM and a 3-D ice-sheet model, *Annals of Glaciology*, **42**: 433-440.
- Zweck, C. and Huybrechts, P., 2005: Modeling of the northern hemisphere ice sheets during the last glacial cycle and glaciological sensitivity, *Journal of Geophysical Research*, **110**: D07103, doi:10.1029/2004JD005489.

M.B. Andersen, C.D. Gallup, D. Scholz, C.H. Stirling, and W.G. Thompson

- Andersen, M.B., Stirling, C.H., Potter, E.-K., Halliday, A.N., Blake, S.G., McCulloch, M.T., Ayling, B.F. and O'Leary, M. 2008: High-precision U-series measurements of more than 500,000 year old fossil corals, *Earth and Planetary Science Letters*, **265**: 229-245.
- Gallup, C.D., Edwards, R.L. and Johnson, R.G. 1994: The timing of high sea levels over the past 200,000 years, *Science*, **263**: 796-800.
- Henderson, G.M., 2002: Seawater ($^{234}\text{U}/^{238}\text{U}$) during the last 800 thousand years, *Earth and Planetary Science Letters*, **199**: 97-110.
- Hughen, K.A., et al. 2004: MarineO4 marine radiocarbon age calibration, 0-26 Cal kyr BP, *Radiocarbon*, **46**(3): 1059-1086.
- Potter, E.-K., Esat, T.M., Schellmann, G., Radtke, U., Lambeck, K. and McCulloch, M.T. 2004: Suborbital-period sea-level oscillations during marine isotope substages 5a and 5c, *Earth and Planetary Science Letters*, **225**(1-2): 191-204.
- Richter, F.M. and Turekian, K.K. 1993: Simple models for the geochemical response of the ocean to climatic and tectonic forcing, *Earth and Planetary Science Letters*, **119**: 121-131.
- Scholz, D. and Mangini, A. 2007: How precise are U-series coral ages? *Geochimica et Cosmochimica Acta*, **71**: 1935-1948.
- Scholz, D., Mangini, A. and Felis, T. 2004: U-series dating of diagenetically altered fossil reef corals, *Earth and Planetary Science Letters*, **218**(1-2): 163-178.
- Thompson, W.G., Spiegelman, M.W., Goldstein, S.L. and Speed, R.C. 2003: An open-system model for the U-series age determinations of fossil corals, *Earth and Planetary Science Letters*, **210**: 365-381.
- Villemaire, B. and Feuillet, N. 2003: Dating open systems by the $^{238}\text{U}-^{234}\text{U}-^{230}\text{Th}$ method: application to Quaternary reef terraces, *Earth and Planetary Science Letters*, **210**(1-2): 105-118.

J. Bamber

- Ackert, R.P., Mukhopadhyay, S., Parizek B.R. and Borns, H.W., 2007: Ice elevation near the West Antarctic Ice Sheet divide during the Last Glaciation, *Geophysical Research Letters*, **34**(21): 6.
- Bamber, J.L., Alley R.B. and Joughin, I., 2007: Rapid response of modern day ice sheets to external forcing, *Earth and Planetary Science Letters*, **257**: 1-13.
- Bindschadler, R., 2006: The environment and evolution of the West Antarctic ice sheet: setting the stage, *Philosophical Transactions of the Royal Society a-Mathematical Physical and Engineering Sciences*, **364**(1844): 1583-1605.
- Chen, J.L., Wilson, C.R., Blankenship, D.D. and Tapley, B.D., 2006: Antarctic mass rates from GRACE, *Geophysical Research Letters*, **33**(11): L11502.
- Csatho, B., Schenk, T., Van Der Veen, C.J. and Krabill, W.B., 2008: Intermittent thinning of Jakobshavn Isbrae, West Greenland, since the Little Ice Age, *Journal of Glaciology*, **54**(184): 131-144.
- Fahnestock, M., Abdalati, W., Joughin, I., Brozena J. and Gogineni, P., 2001: High geothermal heat row, basal melt, and the origin of rapid ice flow in central Greenland, *Science*, **294**(5550): 2338-2342.
- Hansen, J.E., 2007: Scientific reticence and sea level rise, *Environmental Research Letters*, **2**(2).
- Helsen, M.M., van den Broeke, M.R., van de Wal, R.S.W., van de Berg, W.J., van Meijgaard, E., Davis, C.H., Li, Y. and Goodwin, I., 2008: Elevation Changes in Antarctica Mainly Determined by Accumulation Variability, *Science*: 1153894.
- Huybrechts, P. and de Wolde, J., 1999: The dynamic response of the Greenland and Antarctic ice sheets to multiple-century climatic warming, *Journal of Climate*, **12**(8): 2169-2188.
- Joughin, I., Abdalati, W. and Fahnestock, M., 2004: Large fluctuations in speed on Greenland's Jakobshavn Isbrae glacier, *Nature*, **432**(7017): 608-610.
- Luckman, A., Murray, T. de Lange, R. and Hanna, E., 2006: Rapid and synchronous ice-dynamic changes in East Greenland, *Geophysical Research Letters*, **33**(3): art. No. L03503.
- Pattyn, F., 2003: A new three-dimensional higher-order thermomechanical ice sheet model: Basic sensitivity, ice stream development, and ice flow across subglacial lakes, *Journal of Geophysical Research-Solid Earth*, **108**(B8).
- Ramillien, G., Lombard, A., Cazenave, A., Ivins, E.R., Llubes, M., Remy F. and Biancale, R., 2006: Interannual variations of the mass balance of the Antarctica and Greenland ice sheets from GRACE, *Global and Planetary Change*, **53**(3): 198-208.
- Rignot, E., Bamber, J.L., van den Broeke, M.R., Davis, C., Li, Y., van de Berg, W.J. and van Meijgaard, E., 2008: Recent Antarctic ice mass loss from radar interferometry and regional climate modelling, *Nature Geoscience*, **1**(2): 106-110.
- Shepherd, A. and Wingham, D., 2007: Recent sea-level contributions of the Antarctic and Greenland ice sheets, *Science*, **315**(5818): 1529-1532.
- Velicogna, I. and Wahr, J., 2006: Measurements of time-variable gravity show mass loss in Antarctica, *Science*, **311**(5768): 1754-1756.
- Zwally, H.J., Giovinetto, M.B., Li, J., Cornejo, H.G., Beckley, M.A., Brenner, A.C., Saba, J.L. and Donghui, Y., 2005: Mass changes of the Greenland and Antarctic ice sheets and shelves and contributions to sea-level rise: 1992–2002, *Journal of Glaciology*, **51**(175): 509-527.

P.U. Clark

- Aharon, P., 2006: Entrainment of meltwaters in hyperpycnal flows during deglaciation superfloods in the Gulf of Mexico, *Earth and Planetary Science Letters*, **241**: 260-270.
- Bard, E., Arnold, M., Fairbanks, R.G. and Hamelin, B., 1993: ^{230}Th - ^{234}U and ^{14}C ages obtained by mass spectrometry on corals, *Radiocarbon*, **35**: 191-199.
- Bard, E., B. Hamelin, A. Maurice, L.F. Montaggioni, G. Cabioch, G. Faure and F. Rougerie, 1996: Deglacial sea-level record from Tahiti corals and the timing of global meltwater discharge, *Nature*, **382**: 241-244.
- Bassett, S.E., Milne, G.A., Mitrovica, J.X. and Clark, P.U., 2005: Ice sheet and solid earth influences on far-field sea-level histories, *Science*, **309**: 925-928.
- Bond, G., Showers, W., Elliot, M., Evans, M., Lotti, R., Haldsa, I., Bonani, G. and Johnson, S.J., 1999: The North Atlantic's 1-2 kyr climate rhythm: relation to Heinrich events, Dansgaard/Oeschger Cycles and the Little Ice Age, In: Clark, P.U. et al., (Eds) *Mechanisms of Global Climate Change at Millennial Timescales*, Geophysical Monograph 112, American Geophysical Union: 35-58.

- Carlson, A.E., 2009: Geochemical constraints on the Laurentide Ice Sheet contribution to Meltwater Pulse 1A, *Quaternary Science Reviews*, *in press*.
- Clark, P.U., Alley, R.B., Keigwin, L.D., Licciardi, J.M., Johnsen, S.J. and Wang, H., 1996: Origin of the first global meltwater pulse following the last glacial maximum, *Paleoceanography*, **11**: 563-577.
- Clark, P.U., Mitrovica, J.X., Milne, G.A. and Tamisiea, M., 2002: Sea-level fingerprinting as a direct test for the source of global meltwater pulse IA, *Science*, **295**: 2438-2441.
- Clark, P.U., McCabe, A.M., Mix, A.C. and Weaver, A.J., 2004: The 19-kyr B.P. meltwater pulse and its global implications, *Science*, **304**: 1141-1144.
- Clark, P.U., Dyke, A.S., Shakun, J.D., Carlson, A.E., Clark, J., Wohlfarth, B., Hostetler, S.W., Mitrovica, J.X. and McCabe, A.M., *submitted*: The Last Glacial Maximum.
- Cutler, K.B., Edwards, R.L., Taylor, F.W., Cheng, H., Adkins, J., Gallup, C.D., Cutler, P.M., Burr, G.S. and Bloom, A.L., 2003: Rapid sea-level fall and deep-ocean temperature change since the last interglacial period, *Earth and Planetary Science Letters*, **206**: 253-271.
- Dyke, A.S., 2004: An outline of North American Deglaciation with emphasis on central and northern Canada, In: Ehlers, J. and Gibbard, P.L. (Eds) *Quaternary Glaciations: Extent and Chronology*, Elsevier, 373-424.
- Edwards, R.L., Beck, J.W., Burr, G.S., Donahue, D.J., Chappell, J.M.A., Bloom, A.L., Druffel, E.R.M. and Taylor, F.W., 1993: A large drop in atmospheric $^{14}\text{C}/^{12}\text{C}$ and reduced melting in the Younger Dryas, documented with ^{230}Th ages of corals, *Science*, **260**: 962-968.
- Hanebuth, T., Stattegger, K. and Grootes, P.M., 2000: Rapid flooding of the Sunda Shelf: A late-glacial sea-level record, *Science*, **288**: 1033-1035.
- McManus, J.F., Francois, R., Gherardi, J.-M., Keigwin, L.D. and Brown-Leger, S., 2004: Collapse and rapid resumption of Atlantic meridional circulation linked to deglacial climate changes, *Nature*, **428**: 834-837.
- Milne, G.A. and Mitrovica, J.X., 2008: Searching for eustasy in deglacial sea-level histories, *Quaternary Science Reviews*, **27**: 2292-2302.
- Neumann, A. C. and Macintyre, I. G., 1985: Reef response to sea-level rise: Keep-up, catch-up, or give-up: Proceedings, International Coral Reef Congress, 5th, International Society for Reef Studies, **3**: 105-110.
- Pahnke, K., Goldstein, S.L. and Hemming, S.R., 2008: Abrupt changes in Antarctic Intermediate Water circulation over the past 25,000 years, *Nature Geoscience*, **1**: 870-874.
- Paterson, W.S.B., 1994: *The Physics of Glaciers*, Butterworth-Heinemann, 480 pp.
- Peltier, W.R., 1994: Ice age paleotopography, *Science* **265**, 195-201.
- Peltier, W.R., 2005: On the hemispheric origins of meltwater pulse 1a, *Quaternary Science Reviews*, **24**: 1655-1671.
- Peltier, W.R. and Fairbanks, R.G., 2006: Global glacial ice volume and Last Glacial Maximum duration from an extended Barbados sea level record, *Quaternary Science Reviews*, **25**: 3322-3337.
- Porter, S.C. and Swanson, T.W., 1998: Radiocarbon age constraints on rates of advance and retreat of the Puget Lobe of the Cordilleran Ice Sheet during the last glaciation, *Quaternary Research*, **50**: 205-213.
- Rinterknecht, V.R. et al., 2006: The last deglaciation of the southeastern sector of the Scandinavian Ice Sheet, *Science*, **311**: 1449-1452.
- Stanford, J.D., Rohling, E.J., Hunter, S.E., Roberts, A.P., Rasmussen, S.O., Bard, E., McManus, J. and Fairbanks, R.G., 2006: Timing of meltwater pulse 1A and climate responses, *Paleoceanography*, **21**: doi:10.1029/2006PA001340.
- Svendsen, J.I., Gataullin, V., Mangerud, J. and Polyak, L., 2004: The glacial history of the Barents and Kara Sea Region, In: Ehlers, J. and Gibbard, P.L. (Eds) *Quaternary Glaciations: Extent and Chronology*, Elsevier, 369-378.
- Weaver, A.J., Saenko, O.A., Clark, P.U. and Mitrovica, J.X., 2003: Meltwater pulse 1A from Antarctica as a trigger of the Bølling-Allerød warm period, *Science*, **299**: 1709-1713.
- Yokoyama, Y., Lambeck, K., De Deckker, P., Johnston, P. and Fifield, L.K., 2000: Timing of the last glacial maximum from observed sea-level minima, *Nature*, **406**, 713-716.

A. Dutton, F. Antonioli and E. Bard

Andersen, M., 2006: The Precise Measurement of Uranium-Series Isotopes in the Marine Environment, Ph.D. Thesis, ETH, 2006.

- Antonioli, F., Bard, E., Potter, E.-K., Silenzi, S. and Imrota, S., 2004: 215-ka History of sea-level oscillations from marine and continental layers in Argentarola cave speleothems (Italy), *Global and Planetary Change*, **43**: 57-78.
- Bard, E., Antonioli, F. and Silenzi, S., 2002: Sea-level during the penultimate interglacial period based on a submerged stalagmite from Argentarola Cave (Italy), *Earth and Planetary Science Letters*, **196**: 135-146.
- Bintanja, R., van de Wal, R.S.W. and Oerlemans, J., 2005: Modelled atmospheric temperatures and global sea levels over the past million years, *Nature*, **437**: 125-128.
- Bintanja, R. and van de Wal, R.S.W., 2008: North American ice-sheet dynamics and the onset of 100,000-year glacial cycles, *Nature*, **454**: 869-872.
- Dutton, A., Bard, E., Antonioli, F., Esat, T.M., Lambeck, K. and McCulloch, M.T., 2009: The phasing and amplitude of climate and sea level during the penultimate interglacial, doi:10.1038/NGEO470.
- Edwards, R.L., Cheng, H., Murrell, M.T. and Goldstein, S.L., 1997: Protactinium-231 dating of carbonates by thermal ionization mass spectrometry: Implications for Quaternary climate change, *Science*, **276**: 782-786.
- Gallup, C.D., Edwards, R.L. and Johnson, R.G., 1994: The timing of high sea levels over the past 200,000 years, *Science*, **263**: 796-800.
- Hearty, P.J. and Kindler, P., 1995: Sea-level highstand chronology from stable carbonate platforms (Bermuda and the Bahamas), *Journal of Coastal Research*, **11**: 675-689.
- Henderson, G.M., Robinson, L.F., Cox, K. and Thomas, A.L., 2006: Recognition of non-Milankovitch sea-level highstands at 185 and 343 thousand years ago from U-Th dating of Bahamas sediment, *Quaternary Science Reviews*, **25**: 3346-3358.
- Huybers, P. and Wunsch, C., 2005: Obliquity pacing of the late Pleistocene glacial terminations, *Nature*, **434**: 491-494.
- Jouzel, J. et al., 2007: Orbital and millennial Antarctic climate variability over the past 800,000 years, *Science* **317**: 793-797.
- Laskar, J., 1990: The chaotic behaviour of the solar system: A numerical estimate of the size of the chaotic zones, *Icarus*, **88**: 266-291.
- Lea, D.W., Martin, P.A., Pak, D.K. and Spero, H.J., 2002: Reconstructing a 350 ky history of sea level using planktonic Mg/Ca and oxygen isotope records from a Cocos Ridge core, *Quaternary Science Reviews*, **21**: 283-293.
- Li, W.-X., Lundberg, J., Dickin, A.P., Ford, D.C., Schwarcz, H.P., McNutt, R. and Williams, D., 1989: High-precision mass-spectrometric uranium-series dating of cave deposits and implications for palaeoclimate studies, *Nature*, **339**: 534-536.
- Lisiecki, L.E. and Raymo, M.E., 2005: A Pliocene-Pleistocene stack of 57 globally distributed benthic $d^{18}\text{O}$ records, *Paleoceanography*, **20**: PA1003.
- Lundberg, J. and Ford, D.C., 1994: Late Pleistocene sea level change in the Bahamas from mass spectrometric U-series dating of submerged speleothem, *Quaternary Science Reviews*, **13**: 1-14.
- Lüthi, D. et al., 2008: High-resolution carbon dioxide concentration record 650,000-800,000 years before present, *Nature*, **453**: 379-382.
- Martrat, B., Grimalt, J.O., Shackleton, N.J., de Abreu, L., Hutterli, M.A. and Stocker, T.F., 2007: Four climate cycles of recurring deep and surface water destabilizations on the Iberian Margin, *Science*, **317**: 502-507.
- Murray-Wallace, C.V., 2002: Pleistocene coastal stratigraphy, sea-level highstands and meotectonism of the southern Australian passive continental margin - a review, *Journal of Quaternary Science*, **17**: 469-489.
- Robinson, L., Henderson, G.M. and Slowey, N.C., 2002: U-Th dating of marine isotope stage 7 in Bahamas slope sediments, *Earth and Planetary Science Letters*, **196**: 175-187.
- Roucoux, K.H., Tzedakis, P., De Abreu, L. and Shackleton, N.J., 2006: Climate and vegetation changes 180,000 to 345,000 years ago recorded in a deep-sea core off Portugal, *Earth and Planetary Science Letters*, **249**: 307-325.
- Siddall, M., Rohling, E.J., Almogi-Labin, A., Hemleben, C., Meischner, D., Schmelzer, I. and Smeed, D.A., 2003: Sea-level fluctuations during the last glacial cycle, *Nature*, **423**: 853-858.
- Spötl, C., Scholz, D. and Mangini, A., 2008: A terrestrial U/Th-dated stable isotope record of the Penultimate Interglacial, *Earth and Planetary Science Letters*, **276**: 283-292.

Thompson, W.G. and Goldstein, S.L., 2005: Open-System Coral Ages Reveal Persistent Suborbital Sea-Level Cycles, *Science*, **308**: 401-404.

Waelbroeck, C., Labeyrie, L., Michel, E., Duplessy, J.C., McManus, J.F., Lambeck, K., Balbon, E. and Labracherie, M., 2002: Sea-level and deep water temperature changes derived from benthic foraminifera isotopic records, *Quaternary Science Reviews*, **21**: 295-305.

C. González and L.M. Dupont

Adam, P., 2002: Saltmarshes in a time of change, *Environmental Conservation*, **29**: 39-61.

Arz, H.W., Lamy, F., Ganopolski, A., Nowaczyk, N. and Pätzold, J., 2007: Dominant Northern Hemisphere climate control over millennial-scale glacial sea-level variability, *Quaternary Science Reviews*, **26**: 312-321.

Ellison, J.C., 1993: Mangrove retreat with rising sea-level, Bermuda, *Estuarine, Coastal and Shelf Science*, **37**: 75-87.

Flückiger, J., Knutti, R. and Watts, J.W.C., 2006: Oceanic processes as potential trigger and amplifying mechanisms for Heinrich events, *Paleoceanography*, **21**: PA2014, doi: 10.1029/2005PA001204.

González, C., Dupont, L.M., Behling, H. and Wefer, G., 2008: Neotropical vegetation response to rapid climate changes during the last glacial: palynological evidence from the Cariaco Basin, *Quaternary Research*, **69**: 217-230.

González, C. and Dupont, L.M., 2009: Tropical salt marsh succession as sea-level indicator during Heinrich events, *Quaternary Science Reviews*, in press: doi: 10.1016/j.quascirev.2008.12.023.

Hughen, K., Lehman, S., Southon, J., Overpeck, J., Marchal, O., Herring, C. and Turnbull, J., 2004: ^{14}C activity and global carbon cycle changes over the past 50,000 years, *Science*, **303**: 202-207.

Hughen, K., Southon, J., Lehman, S., Bertrand, C. and Turnbull, J., 2006: Marine-derived ^{14}C calibration and activity record for the past 50,000 years updated from the Cariaco Basin, *Quaternary Science Reviews*, **25**: 3216-3227.

Laj, C., 2004: Cruise Report: MD 132 -P.I.C.A.S.S.O. Images XI, Fortaleza-Baltimore-Brest, Mai Juin 2003, Institut Polaire Francais Paul Emile Victor, 53p.

Medina, E., Cram, W.J., Lee, H.S., Lütge, U., Popp, M., Smith, J.A. and Diaz, M., 1989: Ecophysiology of xerophytic and halophytic vegetation of a coastal alluvial plain in northern Venezuela, I: Site description and plant communities, *New Phytologist*, **111**: 233-243.

Peterson, L.C., Haug, G.H., Hughen, K.A. and Röhl, U., 2000: Rapid changes in the hydrologic cycle of the tropical Atlantic during the last glacial, *Science*, **290**: 1947-1951.

Peterson, L. and Haug, G., 2006: Variability in the mean latitude of the Atlantic Intertropical Convergence Zone as recorded by riverine input of sediments to the Cariaco Basin (Venezuela), *Palaeogeography Palaeoclimatology Palaeoecology*, **234**: 97-113.

Ranwell, D.S., 1972: *Ecology of salt marshes and sand dunes*, Chapman and Hall, 258 p.

Rohling, E.J., Marsh, R., Wells, N.C., Siddall, M. and Edwards, N., 2004: Similar melt-water contributions to glacial sea-level variability from Antarctic and northern ice sheets, *Nature*, **430**: 1016-1021.

Rohling, E.J. et al., 2008: New constraints on the timing of sea level fluctuations during early to middle marine isotope stage 3, *Paleoceanography*, **23**: doi:10.1029/2008PA001617.

Siddall, M., Rohling, E.J., Almogi-Labin, A., Hemleben, Ch., Melschner, D., Schmelzer, I. and Smeed, D.A., 2003: Sea-level fluctuations during the last glacial cycle, *Nature*, **423**: 853-858.

Siddall, M., Rohling E.J., Thompson, W.G. and Waelbroeck, C., 2008: Marine isotope stage 3 sea level fluctuations: Data synthesis and new outlook, *Reviews of Geophysics*, **46**: RG4003, doi: 10.1029/2007RG00226.

Thompson, W.G. and Goldstein, S.L., 2006: A radiometric calibration of the SPECMAP timescale, *Quaternary Science Reviews*, **25**: 3207-3215.

Woodroffe, C.D., 1999: Response of mangrove shorelines to sea-level change, *Tropics*, **8**: 159-177.

M.A. Kelly and A.J. Long

Bennike, O. and Björck, S., 2002: Chronology of the last deglaciation of Greenland, *Journal of Quaternary Science*, **17**: 211-219.

- Bennike, O., Björck, S. and Lambeck, K., 2002: Estimates of South Greenland late-glacial ice limits from a new relative sea level curve, *Earth and Planetary Science Letters*, **197**: 171-186.
- Dahl-Jensen, D., Mosegaard, K., Gundestrup, N., Clow, G.D., Johnsen, S.J., Hansen, A.W. and Balling, N., 1998: Past temperatures directly from the Greenland Ice Sheet, *Science*, **282**: 268-271.
- Dawes, P.R. and Glendal, E.W., 2007: A glossary of GEUN publications: spelling and usage of troublesome words and names made easy, *Grønlands Geologiske Undersøgelse Rapport*, **55**: 60 pp.
- Flemming, K. and Lambeck, K., 2004: Constraints on the Greenland Ice Sheet since the Last Glacial Maximum from sea-level observations and glacial-rebound models, *Quaternary Science Reviews*, **23**: 1053-1077.
- Foreman, S.L., Marin, L., Van Der Veen, C., Tremper, C. and Csatho, B., 2008: Little Ice Age and neoglacial landforms at the Inland Ice margin, Isunguata Sermia, Kangerlussuaq, west Greenland, *Boreas*, **4**: 341-351.
- Funder, S., 1978: Holocene Stratigraphy and vegetation history in the Scoresby Sund area, East Greenland, *Grønlands Geologiske Undersøgelse Rapport*, **129**: 66 pp.
- Funder, S., 1989: Quaternary geology of the ice-free areas and adjacent shelves of Greenland. In: Fulton, R.J. (Ed.), *Quaternary Geology of Canada and Greenland*, Geological Survey of Canada, *Geology of Canada*, **1**: 743-792.
- Funder, S. and Hansen, L., 1996: The Greenland Ice Sheet – a model for its culmination and decay during and after the last glacial maximum, *Bulletin of the Geological Society of Denmark*, **42**: 137-152.
- Håkansson, L., Briner, J., Alexanderson, H., Aldahan, A. and Possnert, G., 2007a: ^{10}Be ages from central east Greenland constrain the extent of the Greenland Ice Sheet during the Last Glacial Maximum, *Quaternary Science Reviews*, **26**: 2316-2321.
- Håkansson, L., Graf, A., Strasky, S., Ivy-Ochs, S., Kubik, P.W., Hjort, C. and Schluechter, C., 2007b: Cosmogenic ^{10}Be -ages from the Store Koldewey Island, NE Greenland, *Geografiska Annaler*, **89A**: 195-202.
- Hall, B.L., Baroni, C., Denton, G.H., Kelly, M.A. and Lowell, T.V., 2008a: Relative sea-level Change, Kjove Land, Scoresby Sund, East Greenland: Implications for seasonality in late-glacial time, *Quaternary Science Reviews*, **27**: 2283-2291.
- Hall, B.L., Baroni, C. and Denton, G.H., 2008b: The most extensive Holocene advance in the Stauning Alper, East Greenland, occurred in the Little Ice Age, *Polar Research*, 128-134.
- Hjort, C. and Björck, S., 1984: A re-evaluated glacial chronology for northern East Greenland, *Geologiska Föreningens i Stockholm Förhandlingar*, **105**: 235-242.
- Ingólfsson, Ó., Frich, P., Funder, S. and Humlum, O., 1990: Paleoclimatic implications of an early Holocene glacier advance on Disko Island, West Greenland, *Boreas*, **19**: 297-311.
- Kaufman, D.S., et al., 2004: Holocene thermal maximum in the western Arctic (0-180°W), *Quaternary Science Reviews*, **23**: 529-560.
- Kelly, M., 1980: The status of the Neoglacial in western Greenland, *Grønlands Geologiske Undersøgelse Rapport*, **96**: 24 pp.
- Kelly, M.A., Lowell, T.V., Hall, B.L., Schaefer, J.M., Goehring, B.M., Alley, R.B. and Denton, G.H., 2008: A ^{10}Be chronology of late-glacial and Holocene mountain glaciation in the Scoresby Sund region, east Greenland: Implications for seasonality during late-glacial time, *Quaternary Science Reviews*, **27**: 2273-2282.
- Long, A.J., Roberts, D.H. and Dawson, S., 2006: Early Holocene history of the west Greenland Ice Sheet and the GH-8.2 event, *Quaternary Science Reviews*, **25**: 904-922.
- Long, A.J., Roberts, D.H., Simpson, M.J.R., Dawson, S., Milne, G.A. and Huybrechts, P., 2008: Late Weichselian relative sea-level changes and ice sheet history in southeast Greenland, *Earth and Planetary Science Letters*, **272**: 8-18.
- Mienert, J., Andrews, J.T. and Milliman, J.D., 1992: The East Greenland continental margin (65°N) since the last deglaciation: Changes in seafloor properties and ocean circulation, *Marine Geology*, **106**: 217-238.
- O'Cofaigh, C., Dowdeswell, J.A., Evans, J., Kenyon, N.H., Taylor, J., Mienert, J. and Wilken, M., 2004: Timing and significance of glacially influenced mass-wasting in the submarine channels of the Greenland Basin, *Marine Geology*, **207**: 39-54.

- Rinterknecht, V., Gorokhovich, Y., Schaefer, J. and Caffee, M., 2008: Preliminary ^{10}Be chronology for the last deglaciation of the western margin of the Greenland Ice Sheet, *Journal of Quaternary Science*, **24**: 270-278.
- Roberts D.H., Long, A.J., Schnabel, C., Freeman, S. and Simpson, M.J.R., 2008: The deglacial history of the southeast sector of the Greenland Ice Sheet during the Last Glacial Maximum, *Quaternary Science Reviews*, **27**: 1505-1516.
- Sparrenbom, C.J., Bennike, O., Björck, S. and Lambeck, K., 2006a: Holocene relative sea-level changes in the Qaqortoq area, southern Greenland, *Boreas*, **35**: 171-187.
- Sparrenbom, C.J., Bennike, O., Björck, S. and Lambeck, K., 2006b: Relative sea-level changes since 15000 cal. yr BP in the Nanortalik area, southern Greenland, *Journal of Quaternary Science*, **21**: 29-48.
- Ten Brink, N.W., 1975: Holocene history of the Greenland Ice Sheet based on radiocarbon-dated moraines in West Greenland, *Meddelelser om Grønland*, **201**: 44 pp.
- Tarasov, L. and Peltier, W.R., 2002: Greenland glacial history and local geodynamic consequences, *Geophysical Journal International*, **150**: 198-229.
- Van Tatenhove, F.G.N., Van Der Meer, J.J.M. and Koster, E.A., 1996: Implications for deglaciation chronology from new AMS age determinations in central West Greenland, *Quaternary Research*, **45**: 245-253.
- Weidick, A. and Bennike, O., 2007: Quaternary glaciation history and glaciology of Jakobshavn Isbræ and the Disko Bugt region, West Greenland: a review, *Geological Survey of Denmark and Greenland Bulletin*, **14**: 78 pp.
- Weidick, A., Kelly, M. and Bennike, O., 2004: Late Quaternary development of the southern sector of the Greenland Ice Sheet, with particular reference to the Qassimuit lobe, *Boreas*, **33**: 284-299.

G.A. Milne

- Bard, E., Hamelin, B., Fairbanks, R.G. and Zindler, A., 1990: Calibration of the 14C timescale over the past 30,000 years using mass spectrometric U-Th ages from Barbados corals, *Nature*, **345**: 405-410.
- Clark, J.A., Farrell, W.E. and Peltier, W.R., 1978: Global changes in postglacial sea level: a numerical calculation, *Quaternary Research*, **9**: 265-287.
- Clark, P.U., Mitrovica, J.X., Milne, G.A. and Tamisiea, M., 2002: Sea-level fingerprinting as a direct test for the source of global meltwater pulse 1A, *Science*, **295**: 2438-2441.
- Fairbanks, R.G., 1989: A 17,000 year glacio-eustatic sea level record: influence of glacial melting rates on the Younger Dryas event and deep ocean circulation, *Nature*, **342**: 637-642.
- Farrell, W.E. and Clark, J.A., 1976: On postglacial sea-level, *Geophysical Journal of the Royal Astronomical Society*, **46**: 647-667.
- Fleming, K., Johnston, P., Zwart, D., Yokoyama, Y., Lambeck, K. and Chappell, J., 1998: Refining the eustatic sea-level curve since the Last Glacial Maximum using far- and intermediate-field sites, *Earth and Planetary Science Letters*, **163**(1-4): 327-342.
- Hanebuth, T., Stattegger, K. and Grootes, P.M., 2000: Rapid flooding of the Sunda Shelf: a Late-Glacial sea-level record, *Science*, **288**: 1033-1035.
- Milne, G.A., Mitrovica, J.X. and Schrag, D.P., 2002: Estimating past continental ice volume from sea-level data, *Quaternary Science Reviews*, **21**: 361-376.
- Milne, G.A. and Mitrovica, J.X., 2008: Searching for eustasy in deglacial sea-level histories, *Quaternary Science Reviews*, **27**: 2292-2302.
- Nakada, M. and Lambeck, K., 1989: Late Pleistocene and Holocene sea-level change in the Australian region and mantle rheology, *Geophysical Journal International*, **96**: 497-517.
- Yokoyama, Y., Lambeck, K., De Deckker, P., Johnston, P. and Fifield, L.K. 2000: Timing of the Last Glacial Maximum from observed sea-level minima, *Nature*, **406**: 713-716.

M.E. Raymo, P. Hearty, R. De Conto, M. O'Leary, H.J. Dowsett, M.M. Robinson and J.X. Mitrovica

- Brigham-Grette, J. and Carter, L.D., 1992: Pliocene marine transgressions of northern Alaska – circumarctic correlations and paleoclimatic interpretations, *Arctic*, **45**: 74-89.
- Chandler, M., Rind, D. and Thompson, R., 1994: Joint investigations of the Middle Pliocene climate II: GISS GCM Northern Hemisphere results, *Global Planetary Change*, **9**: 197-219.

- Dowsett, H.J. and Cronin, T.M., 1990: High eustatic sea level during the middle Pliocene: Evidence from the southeastern U.S. Atlantic Coastal Plain, *Geology*, **18**: 435-438.
- Dowsett, H.J., 2007: The PRISM Palaeoclimate Reconstruction and Pliocene Sea-Surface Temperature. In: M. Williams, et al. (Eds) *Deep-time perspectives on climate change: marrying the signal from computer models and biological proxies*, The Micropalaeontological Society Special Publications The Geological Society of London.
- Haywood, A.M. and Valdes, P.J., 2004: Modelling Middle Pliocene warmth: contribution of atmosphere, oceans and cryosphere, *Earth Planetary Science Letters*, **218**: 363–377.
- IPCC, 2007: Intergovernmental Panel on Climate Change, fourth assessment report, available at: www.ipcc.ch/ipccreports/ar4-syr.htm.
- Kaufman, D.S. and Brigham-Grette, J., 1993: Aminostratigraphic correlations and paleotemperature implications, Pliocene Pleistocene high-sea-level deposits, Northwestern Alaska, *Quaternary Science Reviews*, **12**: 21-33.
- Lisiecki, L.E. and Raymo, M.E., 2005: A Pliocene-Pleistocene stack of 57 globally distributed benthic $\delta^{18}\text{O}$ records, *Paleoceanography*, **20**: PA1003, doi:10.1029/2004PA001071.
- Miller, K.G., et al., 2005: The Phanerozoic record of global sea-level change, *Science*, **312**: 12093-1298.
- Milne, G. and Mitrovica, J.X., 2008: Searching for eustasy in deglacial sea level histories, *Quaternary Science Reviews*, **27**: 2292-2302.
- Moucha, R., Forte, A.M., Mitrovica, J.X., Rowley, D.B., Quere, S., Simmons, N.A. and Grand, S.P., 2008: Dynamic topography and sea-level variations: There is no such thing as a stable continental platform, *Earth and Planetary Science Letters*, **271**: 101-108.
- Naish, T.R. and Wilson, G.S., 2009: Constraints on the amplitude of Mid-Pliocene (3.6-2.4 Ma) eustatic sea-level fluctuations from the New Zealand shallow-marine sediment record, *Philosophical Transactions of the Royal Society*, **367**: 169-187.
- Pollard, D. and DeConto, R.M., 2009: Modeling West Antarctic Ice Sheet growth and collapse through the last 5 million years, *Nature*, *in press*.
- Ravelo, A.C., Andreasen, D.H., Lyle, M., Lyle, A.O., and Wara, M.W., 2004: Regional climate shifts caused by gradual global cooling in the Pliocene epoch, *Nature*, **429**: 263.
- Sloan, L.C., Crowley, T.J. and Pollard, D. 1996: Modeling of Middle Pliocene climate with the NCAR GENESIS general circulation model, *Marine Micropaleontology*, **27**: 51–61.
- Wardlaw, B.R. and Quinn, T.M., 1991: The record of Pliocene sea-level change at Enewetak Atoll, *Quaternary Science Reviews*, **10**: 247-258.

C.H. Stirling and M.B. Andersen

- Andersen, M.B., Stirling, C.H., Potter, E.K. and Halliday, A.N., 2004: Toward epsilon levels of measurement precision on $^{234}\text{U}/^{238}\text{U}$ by using MC-ICPMS, *International Journal of Mass Spectrometry*, **237**: 107-118.
- Andersen, M.B., Stirling, C.H., Porcelli, D., Halliday, A.H., Andersson, P.S. and Baskaran, M., 2007: The tracing of riverine U in Arctic seawater with very precise $^{234}\text{U}/^{238}\text{U}$ measurements, *Earth and Planetary Science Letters*, **259**: 171 - 185.
- Andersen, M.B., Stirling, C.H., Potter, E.K., Halliday, A.N., Blake, S.G., McCulloch, M.T., Ayling, B.F. and O'Leary, M., 2008: High-precision U-series measurements of more than 500,000 year old fossil corals, *Earth and Planetary Science Letters*, **265**: 229-245.
- Bard, E., Antonioli, F. and Silenzi, S., 2002: Sea-level during the penultimate interglacial period based on a submerged stalagmite from Argentarola Cave (Italy), *Earth and Planetary Science Letters*, **196**: 135-146.
- Cheng, H., Edwards, R.L., Wang, X.F., Woodhead, J., Hellstrom, J., Wang, Y.J. and Kong, X.G., 2008: A new generation of ^{230}Th dating techniques: tests of precision and accuracy, *Geochimica et Cosmochimica Acta*, **72**: 12S.
- Edwards, R.L., Cutler, K.B., Cheng, H. and Gallup, C.D., 2003: Geochemical Evidence for Quaternary Sea-level Changes. In: Turekian, K.K. and Holland, H.D. (Eds) *Treatise on Geochemistry*, Elsevier, **6.13**: 343-364.
- EPICA community members, 2004: Eight glacial cycles from an Antarctic ice core, *Nature*, **429**: 623-628.

- Esat, T., 1995: Charge collection thermal ion mass spectrometry of thorium, *International Journal of Mass Spectrometry and Ion Processes*, **148**: 159-170.
- Esat, T.M., McCulloch, M.T., Chappell, J., Pillans, B. and Omura, A., 1999: Rapid fluctuations in sea level recorded at Huon Peninsula during the penultimate deglaciation, *Science*, **283**: 197-201.
- Gallup, C.D., Edwards, R.L. and Johnson, R.G., 1994: The timing of high sea levels over the past 200,000 years, *Science*, **263**: 796-800.
- Gallup, C.D., Cheng, H., Taylor, F.W. and Edwards, R.L., 2002: Direct determination of the timing of sea level change during Termination II, *Science*, **295**: 310-313.
- Goldstein, S.J. and Stirling, C.H., 2003: Techniques for measuring uranium-series nuclides: 1992-2002. In: Bourdon, B. et al. (Eds) *Reviews in Mineralogy and Geochemistry*, Geochemical Society, **52**: 23-57.
- Henderson, G.M., Robinson, L.F., Cox, K. and Thomas, A.L., 2006: Recognition of non-Milankovitch sea-level highstands at 185 and 343 thousand years ago from U-Th dating of Bahamas sediment, *Quaternary Science Reviews*, **25**: 3346-3358.
- Hoffmann, D.L., Richards, D.A., Smart, P.L., Borton, C.L. and Edwards, R.L., 2007: U-Th ages of multiple-phases of speleothem growth in the Bahamas and middle - late Pleistocene sea-level, EGU - *Geophysical Research Abstracts*.
- Imbrie, J., Hays, J.D., Martinson, D.G., McIntyre, A., Mix, A.C., Morley, J.J., Pisias, N.G., Prell, W.L. and Shackleton, N.J., 1984: The orbital theory of Pleistocene climate: support from a revised chronology of the marine $d^{18}\text{O}$ record. In: Berger, A. et al. (Eds) *Milankovitch and climate*, Part 1.D. Reidel Publishing Company: 269-303.
- Lisiecki, L.E. and Raymo, M.E., 2005: A Pliocene-Pleistocene stack of 57 globally distributed benthic $d^{18}\text{O}$ records, *Paleoceanography*, **20**: art no PA1003.
- Petit J.R. et al., 1999: Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica, *Nature*, **399**: 429-436.
- Potter, E.K., Stirling, C.H., Andersen, M.B. and Halliday, A.N., 2005: High precision Faraday collector MC-ICPMS thorium isotope ratio determination, *International Journal of Mass Spectrometry*, **247**: 10-17.
- Scholz, D., Mangini, A. and Felis, T., 2004: U-series dating of diagenetically altered fossil reef corals, *Earth and Planetary Science Letters*, **218**: 163-178.
- Scholz, D., Mangini, A. and Meischner, D., 2006: U-redistribution in fossil reef corals from Barbados, West Indies, and sea-level reconstruction for MIS 6.5. In: Sirocko, F. et al. (Eds) *The climate of past Interglacials*, Elsevier, 119-140.
- Siddall M., Rohling E.J., Almogi-Labin A., Hemleben C., Meischner D., Schmelzer I. and Smeed D.A., 2003: Sea-level fluctuations during the last glacial cycle, *Nature*, **423**: 853-858.
- Stirling, C.H., Esat, T.M., Lambeck, K., McCulloch, M.T., Blake, S.G., Lee, D.-C. and Halliday, A.N., 2001: Orbital forcing of the Marine Isotope Stage 9 interglacial, *Science*, **291**: 290-293.
- Stirling, C.H., Andersen, M.B., Potter, E.-K. and Halliday, A.N., 2007: Low temperature isotope fractionation of uranium, *Earth and Planetary Science Letters*, **264**: 208-225.
- Stirling, C.H. and Andersen, M.B., 2008: High-precision U-series measurements of ca. 600,000 year old corals, *Geochimica et Cosmochimica Acta*, **72**: 12S.
- Thomas, A.L., Henderson, G.M., Deschamps, P., Yokoyama, Y., Bard, E., Hamelin, B., Durand, N. and Camoin, G.F., 2008: The timings of sea level change during the last glacial cycle, from U/Th dating of submerged corals: results from IODP expedition 310 "Tahiti sea level", *Geochimica et Cosmochimica Acta*, **72**: 12S.
- Thompson, W.G., Spiegelman, M.W., Goldstein, S.L. and Speed, R.C., 2003: An open-system model for U-series age determinations of fossil corals, *Earth and Planetary Science Letters*, **210**: 365-381.
- Thompson, W.G. and Goldstein, S.L., 2005: Open-system coral ages reveal persistent suborbital sea-level cycles, *Science*, **308**: 401-404.
- Villemant, B. and Feuillet, N., 2003: Dating open systems by the ^{238}U - ^{234}U - ^{230}Th method: Application to Quaternary reef terraces, *Earth and Planetary Science Letters*, **210**: 105-118.

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- Alley, R.B., Clark, P.U., Huybrechts, P. and Joughin, I., 2005: Ice-sheet and sea-level changes, *Science*, **310**: 456-460.

- Barber, D.C., et al., 1999: Forcing of the cold event of 8,200 years ago by catastrophic drainage of Laurentide lakes, *Nature*, **400**: 344-348.
- Bard, E., Hamelin, B., Arnold, M., Montaggioni, L., Cabioch, G., Faure, G. and Rougerie, F., 1996: Deglacial sea-level record from Tahiti corals and the timing of global meltwater discharge, *Nature*, **382**: 241-244.
- Bird, M.I., Fifield, L.K., Teh, T.S., Chang, C.H., Shirlaw, N. and Lambeck, K., 2007: An inflection in the rate of early mid-Holocene eustatic sea-level rise: A new sea-level curve from Singapore, *Estuarine Coastal and Shelf Science*, **71**: 523-536.
- Blanchon, P. and Shaw, J., 1995: Reef drowning during the last deglaciation: Evidence for catastrophic sea-level rise and ice-sheet collapse, *Geology*, **23**: 4-8.
- Carlson, A.E., Clark, P.U., Raisbeck, G.M. and Brook, E.J., 2007: Rapid Holocene deglaciation of the Labrador sector of the Laurentide Ice Sheet, *Journal of Climate*, **20**: 5126-5133.
- Carlson, A.E., Legrande, A.N., Oppo, D.W., Came, R.E., Schmidt, G.A., Anslow, F.S., Licciardi, J.M. and Obbink, E.A., 2008: Rapid early Holocene deglaciation of the Laurentide ice sheet, *Nature Geoscience*, **1**: 620-624.
- Chappell, J. and Polach, H., 1991: Post-glacial sea-level rise from a coral record at Huon Peninsula, Papua New Guinea, *Nature*, **349**: 147.
- Clark, P.U., Mitrovica, J.X., Milne, G.A. and Tamisiea, M.E., 2002: Sea-level fingerprinting as a direct test for the source of global meltwater pulse 1A, *Science*, **295**: 2438-2441.
- Fairbanks, R.G., 1989: A 17,000-year glacio-eustatic sea level record: influence of glacial melting rates on the Younger Dryas event and deep-ocean circulation, *Nature*, **342**: 637-642.
- Farrell, W.E. and Clark, J.A., 1976: On postglacial sea level, *Geophysical Journal of Royal Astronomical Society*, **46**: 647-667.
- Fleming, K., Johnston, P., Zwart, D., Yokoyama, Y., Lambeck, K. and Chappell, J., 1998: Refining the eustatic sea-level curve since the Last Glacial Maximum using far- and intermediate-field sites, *Earth and Planetary Science Letters*, **163**: 327-342.
- Hanebuth, T., Stattegger, K. and Grootes, P.M., 2000: Rapid flooding of the Sunda Shelf: A Late-Glacial sea-level record, *Science*, **288**: 1033-1035.
- Horton, B.P., Gibbard, P.L., Mine, G.M., Morley, R.J., Purintavaragul, C. and Stargardt, J.M., 2005: Holocene sea levels and palaeoenvironments, Malay-Thai Peninsula, southeast Asia, *The Holocene*, **15**: 1199-1213.
- IPCC, 2007: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. In: Solomon, S., et al. (Eds) Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp.
- Kaufmann, G. and Lambeck, K., 2002: Glacial isostatic adjustment and the radial viscosity profile from inverse modeling, *Journal of Geophysical Research-Solid Earth*, **107** (B11): 2280.
- Kendall, R.A., Mitrovica, J.X., Milne, G.A., Törnqvist, T.E. and Li, Y., 2008: The sea-level fingerprint of the 8.2 ka climate event, *Geology*, **36**: 423-426.
- Lambeck, K. and Chappell, J., 2001: Sea level change through the last glacial cycle, *Science*, **292**: 679-686.
- Liu, J.P., Milliman, J.D., Gao, S. and Cheng, P., 2004: Holocene development of the Yellow River subaqueous delta, North Yellow Sea, *Marine Geology*, **209**: 45-67.
- Mitrovica, J.X. and Milne, G.A., 2003: On post-glacial sea level: I. General theory, *Geophysical Journal International*, **154**: 253-267.
- Mitrovica, J.X., Tamisiea, M.E., Davis, J.L. and Milne, G.A., 2001: Recent mass balance of polar ice sheets inferred from patterns of global sea-level change, *Nature*, **409**: 1026-1029.
- Nakada, M. and Lambeck, K., 1988: The melting history of the Late Pleistocene Antarctic Ice Sheet, *Nature*, **333**: 36-40.
- Oppenheimer, M., O'Neill, B.C., Webster, M. and Agrawala, S., 2007: Climate Change: The limits of consensus, *Science*, **317**: 1505-1506.
- Peltier, W.R., 2004: Global glacial isostasy and the surface of the ice-age earth: The ice-5G (VM2) model and grace, *Annual Review of Earth and Planetary Sciences*, **32**: 111-149.
- Rahmstorf, S., 2007: A semi-empirical approach to projecting future sea-level rise, *Science*, **315**: 368-370.

- Siddall, M., Rohling, E.J., Almogi-Labin, A., Hemleben, C., Meischner, D., Schmelzer, I. and Smeed, D.A., 2003: Sea-level fluctuations during the last glacial cycle, *Nature*, **423**: 853-858.
- Törnqvist, T.E., Bick, S.J., Gonzalez, J.L., van der Borg, K. and de Jong, A.F.M., 2004: Tracking the sea-level signature of the 8.2 ka cooling event: New constraints from the Mississippi Delta, *Geophysical Research Letters*, **31**: L23309.
- Törnqvist, T.E., Bick, S.J., van der Borg, K. and de Jong, A.F.M., 2006: How stable is the Mississippi Delta? *Geology*, **34**: 697-700.
- Van de Plassche, O., 1982: Sea-level change and water-level movements in the Netherlands during the Holocene, *Mededelingen Rijks Geologische Dienst*, **36**: 1-93.
- Yu, S.-Y., Berglund, B.E., Sandgren, P. and Lambeck, K., 2007: Evidence for a rapid sea-level rise 7600 yr ago, *Geology*, **35**: 891-894.

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- deMenocal, P.B., Ortiz, J., Guilderson, T., Adkins, J., Sarnthein, M., Baker, L. and Yarusinski, M., 2000: Abrupt onset and termination of the African Humid Period: Rapid climate response to gradual insolation forcing, *Quaternary Science Reviews*, **19**: 347-361.
- Fleitmann, D., Burns, S.J., Mudelsee, M., Neff, U., Kramers, J., Mangini, A. and Matter, A., 2003: Holocene Forcing of the Indian Monsoon recorded in a stalagmite from Southern Oman, *Science*, **300**: 1737-1739.
- Haug, G.H., Hughen, K.A., Sigman, D.M., Peterson, L.C. and Röhl, U., 2001: Southward migration of the Intertropical convergence zone through the Holocene, *Science*, **293**: 1304-1308.
- Wang, B. and Ding, Q., 2006: Changes in global monsoon precipitation over the past 56 years, *Geophysical Research Letters*, **33**: L06711.
- Wang, B. and Ding, Q., 2008: Global monsoon: Dominant mode of annual variation in the tropics, *Dynamics of Atmospheres and Oceans*, **44**: 165-183.
- Wang, Y. et al., 2005: The Holocene Asian monsoon: Links to solar changes and North Atlantic climate, *Science*, **308**: 874-857.
- Wang, Y. et al., 2008: Millennial- and orbital-scale changes in the East Asian monsoon over the past 224,000 years, *Nature*, **451**: 1090-1093.