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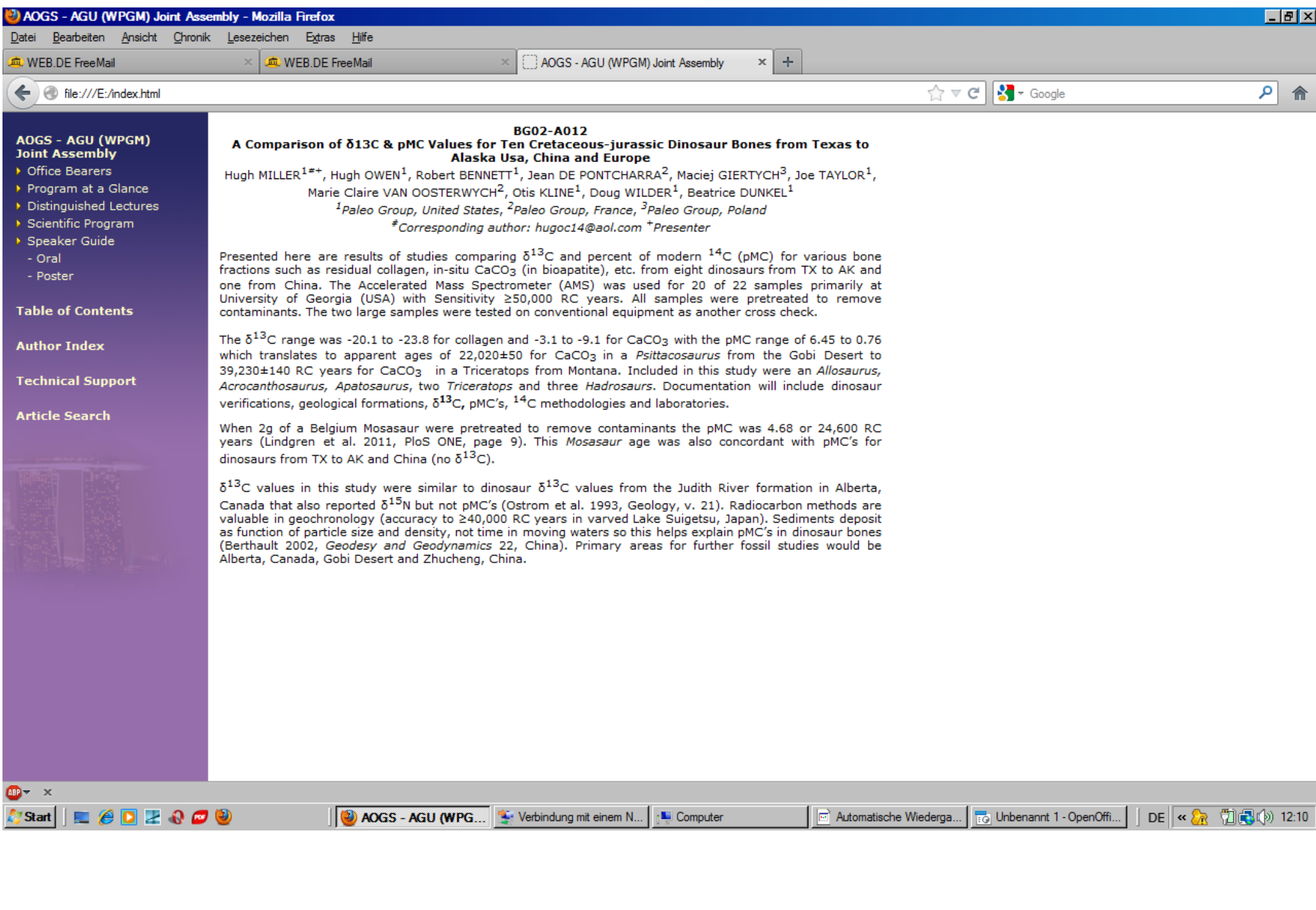
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Timeslot	15/8/2012 16:00 - 18:00	Room	Leo 2
BG02 (1) - Biomarkers in Living Organisms, Particulate Matter, and Sediments and their Application in Paleolimnology, Paleoceanography, and Paleoclimate			
Session Chair(s) Jung-Hyun Kim, Carme Huguet			
16:00 BG02-A002	BG02-D3-PM2-Leo2-001 Environmental Drivers on the Global Distribution of Novel Glycerol Dialkyl Glycerol Tetraethers	Carme HUGUET ¹ , Susanne FIETZ ¹ , Antoni ROSELL-MELÉ ² ¹ ICTA ² UAB	
16:15 BG02-A007	BG02-D3-PM2-Leo2-002 Reconstruction of Paleo-temperature Using Biomarker Diols in Arctic and Antarctic Ocean	Soo A JEON ¹ , Seung Il NAM ² , Ho Il YOON ² , Ku Chul YU ² , Kyung-Hoon SHIN ¹ ¹ Hanyang University ² Korea Ocean Research and Development Institute	
16:30 BG02-A011	BG02-D3-PM2-Leo2-003 Carbon Caption and Storage in Rocks-perspective from Cyanobacteria and Conical Stromatolite	Biqing LIANG ¹ , Ting-Di WU ² , Tanja BOSAK ³ , Chung-Ho WANG ¹ ¹ Academia Sinica ² Institute Curie, Laboratory of Ion Microscopy ³ Massachusetts Institute of Technology	
16:45 BG02-A005	BG02-D3-PM2-Leo2-004 Tracing Soil Organic Carbon in the Lower Amazon River and Its Tributaries Using GDGT Distributions and Bulk Organic Matter Properties	Jung-Hyun KIM ¹ , Claudia ZELL ¹ , Patricia MOREIRA-TURCQ ² , Marcela A.P. PÉREZ ³ , Gwenaél ABRIL ⁴ , Jean-Michel MORTILLARO ⁵ , Johan W.H. WEIJERS ⁶ , Tarik MEZIANE ⁵ , Jaap S. SINNINGHE DAMSTÉ ¹ ¹ NIOZ Royal Netherlands Institute for Sea Research ² IRD-GET-HYBAM ³ Federal University of Amazonas ⁴ University Bordeaux 1 ⁵ BOREA ⁶ Utrecht University	
17:00 BG02-A012	BG02-D3-PM2-Leo2-005 A Comparison of $\delta^{13}C$ & pMC Values for Ten Cretaceous-jurassic Dinosaur Bones from Texas to Alaska Usa, China and Europe	Hugh MILLER ¹ , Hugh OWEN ¹ , Robert BENNETT ¹ , Jean DE PONTCHARRA ¹ , Maciej GIERTYCH ¹ , Joe TAYLOR ¹ , Marie Claire VAN OOSTERWYCH ¹ , Otis KLINE ¹ , Doug WILDER ¹ , Beatrice DUNKEL ¹ ¹ Paleo Group	
17:15 BG02-A009	BG02-D3-PM2-Leo2-006 Carbon Isotopic and Organic Biomarker Evidence of Terrigenous Organics Export to the Deep Sea through Hyperpycnal Injection	Selvaraj KANDASAMY ¹ , Elizabeth CANUEL ² , Jinyu YANG ¹ , Jr-Chuan HUANG ³ , Tsung-Yu LEE ³ , Minhan DAI ¹ , Shuh-Ji KAO ⁴ ¹ Xiamen University ² Virginia Institute of Marine Science ³ National Taiwan University ⁴ Academia Sinica	



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BG02-A012

A Comparison of $\delta^{13}C$ & pMC Values for Ten Cretaceous-jurassic Dinosaur Bones from Texas to Alaska Usa, China and Europe

Hugh MILLER^{1*+}, Hugh OWEN¹, Robert BENNETT¹, Jean DE PONTCHARRA², Maciej GIERTYCH³, Joe TAYLOR¹, Marie Claire VAN OOSTERWYCH², Otis KLINE¹, Doug WILDER¹, Beatrice DUNKEL¹
¹Paleo Group, United States, ²Paleo Group, France, ³Paleo Group, Poland
 *Corresponding author: hugoc14@aol.com +Presenter

Presented here are results of studies comparing $\delta^{13}C$ and percent of modern ^{14}C (pMC) for various bone fractions such as residual collagen, in-situ $CaCO_3$ (in bioapatite), etc. from eight dinosaurs from TX to AK and one from China. The Accelerated Mass Spectrometer (AMS) was used for 20 of 22 samples primarily at University of Georgia (USA) with Sensitivity $\geq 50,000$ RC years. All samples were pretreated to remove contaminants. The two large samples were tested on conventional equipment as another cross check.

The $\delta^{13}C$ range was -20.1 to -23.8 for collagen and -3.1 to -9.1 for $CaCO_3$ with the pMC range of 6.45 to 0.76 which translates to apparent ages of $22,020 \pm 50$ for $CaCO_3$ in a *Psittacosaurus* from the Gobi Desert to $39,230 \pm 140$ RC years for $CaCO_3$ in a *Triceratops* from Montana. Included in this study were an *Allosaurus*, *Acrocanthosaurus*, *Apatosaurus*, two *Triceratops* and three *Hadrosaurs*. Documentation will include dinosaur verifications, geological formations, $\delta^{13}C$, pMC's, ^{14}C methodologies and laboratories.

When 2g of a Belgium Mosasaur were pretreated to remove contaminants the pMC was 4.68 or 24,600 RC years (Lindgren et al. 2011, PloS ONE, page 9). This *Mosasaur* age was also concordant with pMC's for dinosaurs from TX to AK and China (no $\delta^{13}C$).

$\delta^{13}C$ values in this study were similar to dinosaur $\delta^{13}C$ values from the Judith River formation in Alberta, Canada that also reported $\delta^{15}N$ but not pMC's (Ostrom et al. 1993, Geology, v. 21). Radiocarbon methods are valuable in geochronology (accuracy to $\geq 40,000$ RC years in varved Lake Suigetsu, Japan). Sediments deposit as function of particle size and density, not time in moving waters so this helps explain pMC's in dinosaur bones (Berthault 2002, *Geodesy and Geodynamics* 22, China). Primary areas for further fossil studies would be Alberta, Canada, Gobi Desert and Zhucheng, China.

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