

# isKarst from Recent to Reservoirs

# 2008

Program for the meeting held June 6 to 11,  
Rapid City, South Dakota

**KARST FROM RECENT  
TO RESERVOIRS**



**A Karst Waters Institute Conference**

## CONFERENCE SUPPORTERS

*The support, financial and otherwise, of the following organizations is greatly appreciated*

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## CONFERENCE ORGANIZERS AND STAFF

### Conference Chairmen:

Charles T. "Chip" Feazel  
John Mylroie  
Ira D. Sasowsky

### Book Production Editor:

Elaine Butcher

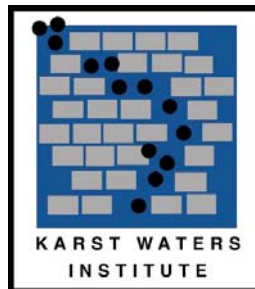
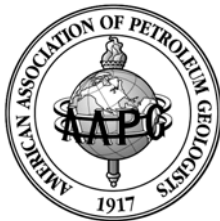
### Field Trip:

Arthur N. Palmer  
Marc Ohms

### Conference Committee:

Pavel Bosak, Lee Florea, Derek Ford, Robert H. Goldstein, Paul M. (Mitch) Harris, Philippe Lapointe, Robert G. Loucks, Maureen Muldoon, Geary Schindel, Peter Smart, George Veni, William B. White

**Special Thanks:** Larry Dale & Jayne Kraemer (Rushmore Plaza Civic Center), Mike Connors (The Inform Group), the staff & superintendents of Wind Cave National Park and Jewel Cave National Monument.



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# PROGRAM

All events except the banquet are held in LaCroix Hall C of the Rushmore Plaza Civic Center  
The lead author is the presenter, unless otherwise noted (\*)

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## *Saturday, June 7 2008*

5:00 pm – 6:00 pm                      Registration  
6:00 pm – 8:00 pm                      **Reception, Introductory Lecture and hors d'oeuvres**

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## *Sunday, June 8 2008*

8:00 am – 8:15 am                      **Opening Remarks**  
8:15 am – 9:00 am                      **William B. White**  
*The colors and flavors of karst*  
9:00 am – 9:15 am                      Discussion  
9:15 am – 9:30 am                      **Break**  
9:30 am – 10:15 am                      **Charles Kerans**  
*Predicting architecture and recovery behavior of meteoric paleokarst reservoirs from hierarchy of associated unconformity surfaces*  
10:15 am – 10:30 am                      Discussion  
10:30 am – 11:00 am                      **Pavel Bosák**  
*What is palaeokarst?*  
11:00 am – 11:30 am                      **Robert G. Loucks**  
*Origin and modification of lower Ordovician Ellenburger Group paleokarst breccias and fractures in central and west Texas*  
11:30 am – 1:00 pm                      **Lunch (on your own)**  
1:00 pm – 1:30 pm                      **Robert H. Goldstein**  
*Changing conceptual models in carbonate diagenesis*  
1:30 pm – 2:00 pm                      **Alexander Klimchouk**  
*Deep-seated karst: paleokarst, or hypogenic speleogenesis?*  
2:00 pm – 2:30 pm                      **Kevin W. Stafford, Fred H. Behnken, and Jesse G. White**  
*Hypogene speleogenesis within the central basin platform: karst porosity in the Yates field, Pecos County, Texas, U.S.A.*  
2:30 pm – 3:00 pm                      **Break**  
3:00 pm – 3:30 pm                      **Victor Polyak and Paula Provencio**  
*H<sub>2</sub>S-H<sub>2</sub>SO<sub>4</sub>-driven hypogenic speleogenesis of the caves in the Guadalupe Mountains, New Mexico and Texas, U.S.A.*  
3:30 pm – 4:00 pm                      **Geary M. Schindel, Steven Johnson, and E. Calvin Alexander, Jr.**  
*Hypogene processes in the Balcones fault zone Edwards Aquifer in south-central Texas, a new conceptual model to explain aquifer dynamics*  
4:00 pm – 4:30 pm                      **Derek C. Ford**  
*Morphology and genesis of the main ore body at Nanisivik zinc/lead mine, Baffin*

*Island, Canada: an outstanding example of paragenetic dissolution of carbonate bedrocks with pene-contemporaneous Precipitation of Sulfides and Gangue Minerals in a Hypogene Setting*

4:30 pm – 5:00 pm

**Annette S. Engel and Kelli W. Randall**

*Microbially mediated carbonate dissolution in karst aquifers*

5:00 pm – 6:00 pm

Open Time

6:00 pm – 8:30 pm

**Posters and Buffet Reception:**

Authors will be present at their posters from 6:00 pm to 7:30 pm

**Richard B. Aram**

*Lewis and Clark Caverns, (Jefferson County) Montana: Karst from a prolonged and profound tectonic history*

**Richard B. Aram and Sheryl A. Aram**

*Bluff Dwellers Cave (McDonald County, Missouri): A natural classroom for subsurface fluid flow and reservoir heterogeneity*

**Kevin L. Carrière, John C. Hopkins, and Hans G. Machel**

*Fabric alteration and stable isotope geochemistries of karsted Madison Group Carbonates: Lick Creek Cave, Montana, USA.*

**Anita Eröss, Anita É. Csoma, and Judit Szőnyi-Mádl**

*The effects of mixed hydrothermal and meteoric fluids on karst reservoir development, Buda Thermal Karst, Hungary*

**Melissa E. Hill and Angel Martin**

*A conceptual model of preferential flow pathways in a karst aquifer using multiple data types*

**Gemme Labraña, Juan José Pueyo, and David William Hunt**

*Fracture controlled platform margins, implications in the evolution of karst processes: an approach from a 3D view.*

**Lewis Land and Paul Burger**

*Rapid recharge events in a semi-arid environment: two examples from karstic aquifers in southeastern New Mexico*

**Luciane Licour**

*The geothermal reservoir of the carboniferous limestones of Hainaut (Belgium)*

**Robert G. Loucks and Stephen Ruppel**

*Lower Ordovician Ellenburger Group collapsed-paleocave facies and associated pore network in the goldrus unit #3 core, Barnhart Field, Texas*

**Robert G. Loucks**

*Paleocave facies types and distribution in a coalesced, collapsed-paleocave system from the lower Ordovician, Ellenburger Group, as defined by the integration of ground-penetrating radar and shallow-core and outcrop data*

**Laura Rosales-Lagarde, Penelope J. Boston, and Kevin W. Stafford**

*Groundwater flow-path identification in the Tabasco-Chiapas mountain range, southern Mexico*

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**Monday, June 9 2008**

7:00 am – 9:00 pm

Full day field trip, including lunch and dinner. Buses will be on the East side of the Civic Center or in the street near the Holiday Inn. Please bring your name badge and be on time to load the busses by 7 am. The Holiday Inn restaurant serves breakfast starting 6 am, including a buffet for under \$10.

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**Tuesday, June 10 2008**

8:00 am – 8:30 am

**Kevin J. Cunningham, Michael C. Sukop, Haibo Huang, Pedro F. Alvarez, H. Allen Curran, Michael A. Wacker, Lee J. Florea, Robert A. Renken, and Joann F. Dixon**

*Biogenic macroporosity and its Lattice Boltzmann method permeability in the karst Biscayne aquifer*

8:30 am – 9:00 am

**Lee Florea, Kevin Cunningham, and Steve Altobelli**

*Visualization of groundwater flow within touching-vug and matrix porosity in an eogenetic karst aquifer*

9:30 am – 10:00 am

**Richard Labourdette and John Mylroie\***

*Flank-Margin Caves: Preservation probability and burial outcomes*

10:00 am – 10:30 am

**Break**

10:30 am – 11:00 am

**Susan Q. White and John E. Mylroie**

*Speleogenesis in the unconsolidated Cenozoic limestones of southern Australia*

11:00 am – 11:30am

**Bojan Otoničar**

*Evolution of paleokarst related to a forebulge unconformity: an example from the late Cretaceous and Paleogene of Kras, Matarsko Podolje and Istria; southwest Slovenia and northwest Croatia*

11:30 am – 12:00 pm

**G.D. Jones, J.F. Collins, Y. Xiao, J.A.M. Kenter, P.M. Harris, and A. Assaubaeva**

*Geothermal convection in the Tengiz Reservoir: A mechanism for generating burial karst?*

12:00 pm – 1:00 pm

**Lunch (on your own)**

1:00 pm – 1:30 pm

**Stephen R.H. Worthington**

*Porosity of modern karst aquifers*

1:30 pm – 2:00 pm

**Peter L. Smart and Fiona F. Whitaker**

*Are models of collapsed palaeocave breccias based on continental caves adequate?*

2:00 pm – 2:30 pm

**Juan I. Baceta, Vicoriano Pujalte, V. Paul Wright\*, and Philippe Lapointe**

*Eogenetic karstification and palaeohydrology of a Danian land-attached carbonate shelf (North Spain)*

2:30 pm – 3:00 pm	<b>Break</b>
3:00 pm – 3:30 pm	<b>Jerome A. Bellian and Charles Kerans</b> <i>Lower Paleozoic paleokarst mapping with airborne LIDAR, Franklin Mountains, El Paso, Texas</i>
3:30 pm – 4:00 pm	<b>Peter Gutteridge, Francis Witkowski, Ivar Grunnaleite, Nils Bo Jensen, and Gunnar Sælen</b> <i>Quantifying karst reservoirs using outcrop analogues and sub-surface data</i>
4:00 pm – 4:30 pm	<b>Roy E. Plotnick, Fabien Kenig, Ian Glasspool, and Andrew Scott</b> <i>Kaskaski paleokarsts of Northern Illinois, U.S.A.</i>
4:30 pm – 5:00 pm	<b>Sharon F. Diehl and R. Ernest Anderson</b> <i>Fluid flow, dissolution, breccia, and carbonate cement along a low-angle normal fault; evidence for karsting in a fault zone, Mormon Mountains, Nevada</i>
5:00 pm – 6:00 pm	Open Time
6:00 pm – 7:00 pm	<b>Social Hour with bar</b>
7:00 pm – 9:00 pm	<b>Banquet</b> Banquet speaker: <b>William C. Stone</b> <i>Autonomous exploration, mapping, and characterization of channelized karst aquifers</i>

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**Wednesday, June 11 2008**

8:00 am – 8:30 am	<b>R. Mark Maslyn</b> <i>Late-Mississippian paleokarst features and thermobaric features with related porosity creation and destruction in the Aspen, Colorado area, U.S.A.</i>
8:30 am – 9:00 am	<b>Michiel Duser and David Lagrou</b> <i>Paleokarst-enhanced reservoir for geothermics and gas storage in carboniferous limestone (Campine Basin, NW European Carboniferous Basin)</i>
9:00 am – 9:30 am	<b>Baoping Han and Xueqiang Zhu</b> <i>Water-rock interaction in Wumishan Formation carbonate rocks of Renqiu oilfield and evolution of the reservoir and permeability</i>
9:30 am – 10:00 am	<b>Break</b>
10:00 am – 10:30 am	<b>Philippe A. Lapointe and G. Massonnat</b> <i>Complex karst-controlled reservoirs: identification and prediction in 3d-space of reservoir characteristics</i>
10:30 am – 11:00 am	<b>Arthur N. Palmer</b> <i>Quantitative interpretation of solution porosity</i>
11:00 am – 12:00 pm	<b>Panel Discussion - the future of paleokarst and carbonate reservoirs</b>
12:00 pm	Conference Ends

Lined writing area consisting of multiple horizontal dotted lines.

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