

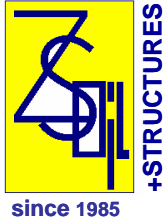
NUMERICS IN GEOTECHNICS & STRUCTURES 2010

25 YEARS **ZSOIL**&**STRUCTURES.PC**



+STRUCTURES

since 1985



NUMERICS IN GEOTECHNICS & STRUCTURES 2010

25years ZSOIL.PC

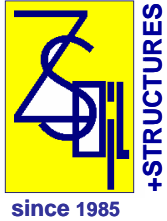
ZSOIL Story

1985-2010

1982 Creation of Zace Services Ltd, software engineering,
by Thomas Zimmermann & partners

1982 Discussion with – Bernard Saugy, EPFL
– François Vuilleumier, BG SA

Showed the need for a “civil engineering failure analysis program”,
combining soil & structures
on workstations, or PCs (with 16bits words had just appeared)

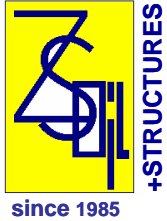


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ZSOIL Story

- 1983 Discussions with – John Wolf, Elektrowatt AG, & conceptor of program STRIP
– T.J.R. Hughes, California Institute of Technology
– J.H. Prévost, Princeton University

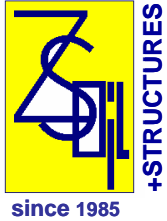
.....led to a [concept](#)



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ZSOIL Story

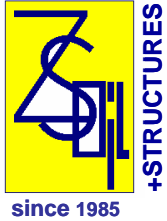
- The concept** : – “code métier”(dedicated to civil engineering)
- on PC (took years to be accepted, CISC vs RISK)
 - globally coherent “unified physics” (not libraries)
 - object-oriented (starting ~1987)



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ZSOIL Story

- The early architects: : – Carlos Rodriguez, EPFL & UC Berkeley
- Basile Dendrou, EPFL & Purdue University
 - Blaise Rebora, EPFL
 - Thomas Zimmermann, EPFL, UC Berkeley, Caltech



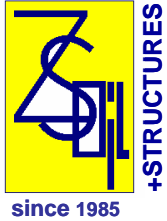
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ZSOIL Story

The people (chronological):

- C. Rodriguez, B. Dendrou, B. Rebora, J. Diaz, F. Delaraye, M. Howe, E. Seker, [S.Commend](#), W. Atamaz-Sibai, E. Davalle, [A.Truty](#), L. Vernier, W. Farra, [A. Urbański](#), B. Rutscho, B. Radic, A. Barry, D. Alvarez, Y.Li , A.Wroblewski, [K. Podleś](#), A. Wiktor,
- P. Roelfstra, [Ph. Menétrey](#), contributed to some theoretical models.
- [J.-L. Sarf](#), [A. Bisetti](#), [J. L'Eplattenier](#), [D. Tendon](#), M. Kharchafi, R. Gaerber, L.Laloui, V. Labiouse, D. Collomb, S. Domon, C. Marzer, G.Roelfstra, C. Gindroz, [F.Geiser](#), F. Pellet, C. Carron, M. Favre, P. Mayu, [U. Ekdahl](#) contributed to the validation

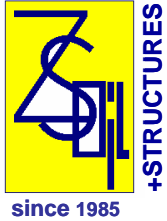
blue: present today



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ZSOIL Story

- The present architects: : – A.Truty, Cracow University of Technology & EPFL
– K. Podleś, Cracow University of Technology
– A. Urbański, Cracow University of Technology
– Thomas Zimmermann
+ free lance collaborators



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ZSOIL Story.....

The supporters & sponsors:

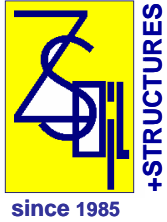
Individuals:

- F. Vuilleumier(BG SA), instrumental in the start of the 2D&3D versions
- [W.Ammann](#)(Hilti AG), through several important collaborations
- [J.P.Wolf](#), through hundreds of discussions

Financial: – the Swiss Commission for Technology and Innovation (CTI) under grants 2672.1, 2387.1 and 2995.1, for 3D version 4, and 4182.1, for version 6.

Financial&technical: – [Bonnard & Gardel ingénieurs conseils SA, Lausanne](#),
– [GEOS ingénieurs conseils SA, Genève](#),
– [GVH ingénieurs conseils SA, Tramelan](#),
– [Schneller-Ritz und Partner AG Ingenieurbüro, Brigue](#),
– [Stucky ingénieurs conseils SA, Renens](#),
– also [Emch + Berger Ing. AG, Bern](#) & [KBM, Sion](#)

Collaborations: EPFL – Laboratory of Structural and Continuum Mechanics
([Profs. F. Frey & Th.Zimmermann](#)) ,
– Laboratory of Rock Mechanics ([Prof. F. Descoeurdes](#)),
– Laboratory of Soil Mechanics ([Prof. L. Vulliet](#)).
– Laboratory of concrete structures([Prof.Muttoni](#))



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ZSOIL Story.... **Recent DEVELOPMENTS**

- unified advanced constitutive modeling :
Hardening soil model
- dynamics



+STRUCTURES

since 1985

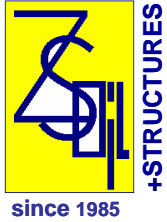
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ZSOIL worldwide



● agents

● installations



NUMERICS IN GEOTECHNICS & STRUCTURES 2010

ZSOIL today:

about 2000 worldwide
+ 2000 cracked??

FREE STUDENT VERSION:

3 NEW ACTIVATIONS EVERY DAY

OPENING LECTURE:



Risks, Disasters, Crisis and Global Change – From Threats to Sustainable Opportunities

Walter J. Ammann

President and CEO, Global Risk Forum GRF Davos,

Walter J. Ammann

President and CEO, Global Risk Forum GRF Davos,
walter.ammann@grforum.org, www.grforum.org

Walter Ammann is the Founder, and CEO of GRF Davos, a foundation focused on risk reduction disaster management, sustainable development and climate change adaptation, organizer of the biennial IDRC Conference in Davos, and director of the GRF Risk Academy, an institution offering knowledge management, R & D and continuous education worldwide. His interest in current R&D is risk reduction and disaster management (vulnerability reduction, resilience increase) and the harmonization with climate change in all their facets.

He has been lead author of the Strategy on “Dealing with Risks and Disasters” for the Swiss Government and is advisor to numerous national and international institutions.

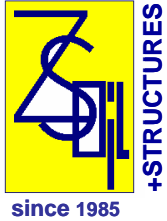
Walter J. Ammann ctnd

Walter Ammann got his MSc and PhD in structural dynamics and earthquake engineering at ETH Zurich.

He started his professional career in various consulting companies, was responsible for the R&D in construction technology of a globally acting company, and for 15 years Director of the Federal Institute for Natural Hazards in Davos and Deputy Director of the Federal Research Institute on Forest, Snow and Landscape in Birmensdorf, Zurich.

He is author and co-author of over 250 papers, books and scientific reports and is a member of various national and international professional associations and expert consulting groups like the UNISDR Science and Technology Council.

He is a Permanent Visiting Professor at the Harbin Institute of Technology in Harbin, China.



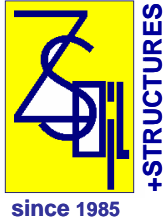
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ZSOIL 2010 Prizes are attributed to:

Dr Stéphane Commend: for outstanding contributions to the development of stabilized formulations for geomechanics and validation of ZSOIL.PC

Dr Rafał Obrzud: for outstanding contributions to the development of constitutive formulations for geomechanics

Dr Matthias Preisig: for outstanding contributions to the development of meshless formulations for geomechanics



NUMERICS IN GEOTECHNICS & STRUCTURES 2010

ZSOIL ACADEMY:

Prof.Dr Thomas Zimmermann, President

Members:

Dr Stéphane Commend: ZSOIL Prize 2010

Ulf Ekdahl: ZSOIL Prize 2005

Dr Rafał Obrzud : ZSOIL Prize 2010

Marina Pelevina: ZSOIL Prize 2005

Dr Krzysztof Podleś: ZSOIL Prize 2005

Dr Matthias Preisig: ZSOIL Prize 2010

Jean-Luc Sarf: ZSOIL Prize 2005

Prof.Dr Andrzej Truty: ZSOIL Prize 2005