

Hydroinformatik I - WiSe 2021/2022

HyBHW-S1-01-V2: Umweltinformatik

Prof. Dr.-Ing. habil. Olaf Kolditz

¹Helmholtz Centre for Environmental Research – UFZ, Leipzig

²Technische Universität Dresden – TUD, Dresden

³Center for Advanced Water Research – CAWR

⁴TUBAF-UFZ Center for Environmental Geosciences – C-EGS, Freiberg / Leipzig

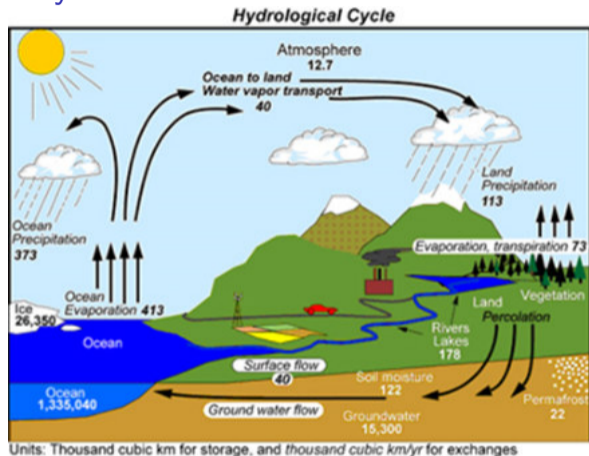
Dresden, 22.10.2021

Fahrplan für heute ...

1. Einführung in die Hydrosystemanalyse / Hydroinformatik
2. Ihre Fragen

Hydrosystemanalyse

Hydrosysteme

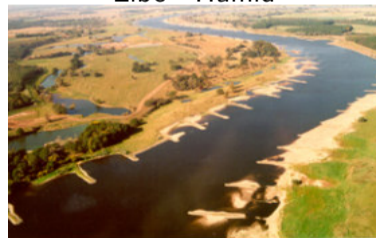


Referenz: Sachse et al. (2014) OGS Tutorial "Computational Hydrology"

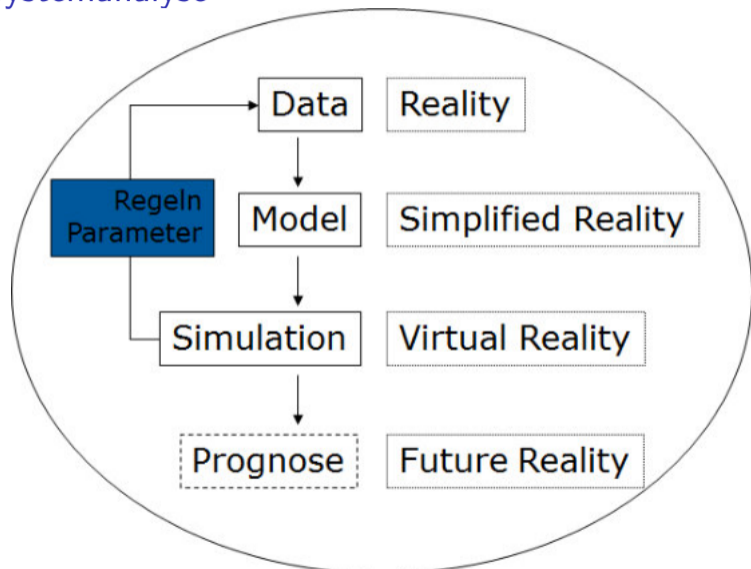
Totes Meer (Dead Sea) - Arid



Elbe - Humid



Systemanalyse



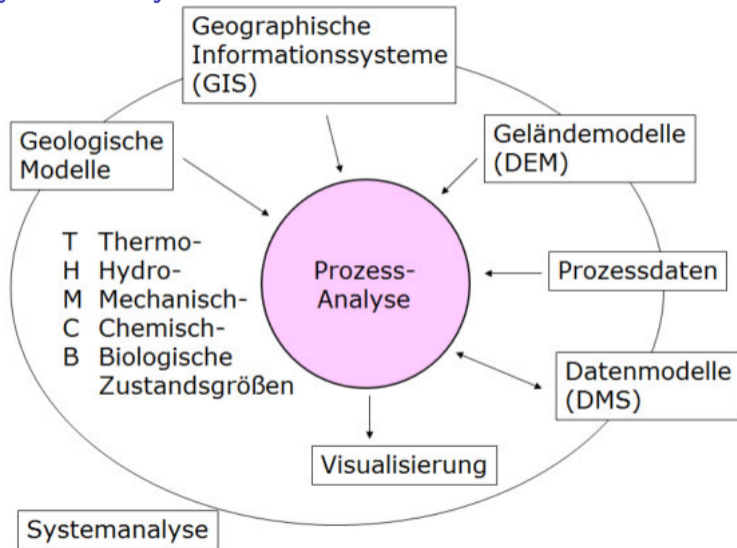
Kalibrierung →

Verifizierung →

Validierung



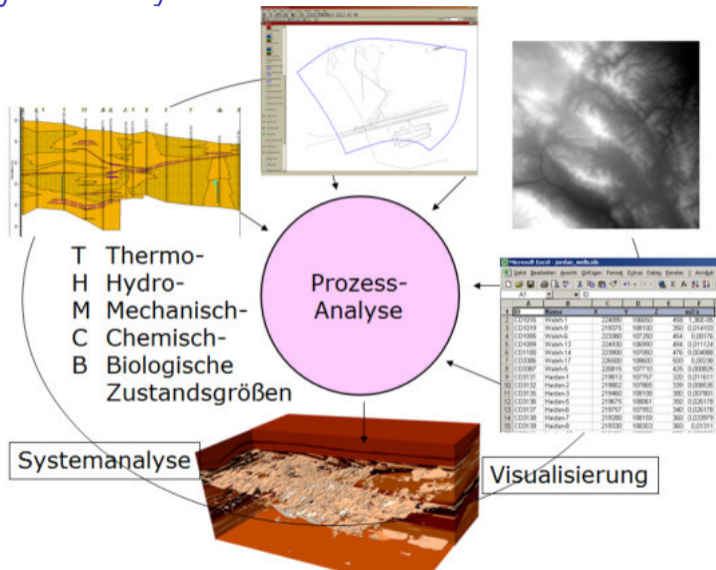
Systemanalyse



Notizen:

- ...

Systemanalyse



Notizen:

- ...

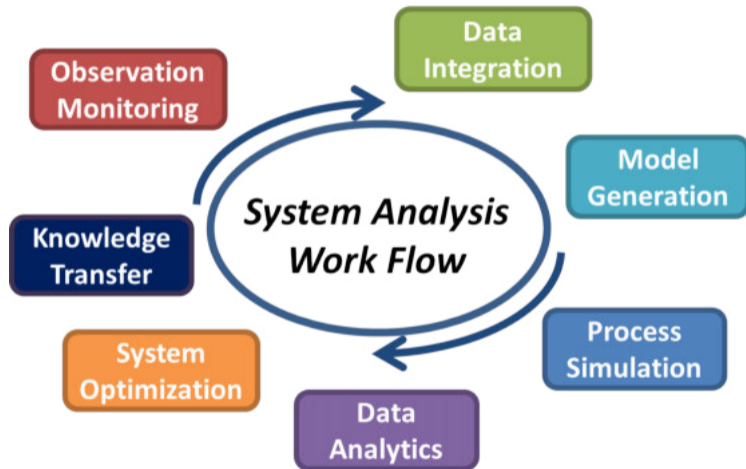
Umweltinformatik

- Workflows
 - Visualisierung
-

- Big-Data
 - Datenbasierte Methoden (Maschinelles Lernen)
 - ...
-

- Beispiele (Hydrologie, Geotechnik, Geothermie, ...)

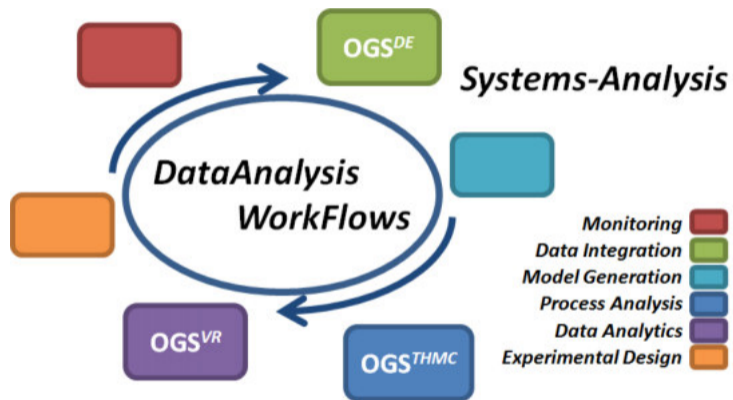
(Generic) Workflows



Notizen:

- ...

(Generic) Workflows - Entwicklung



Notizen:

- ...

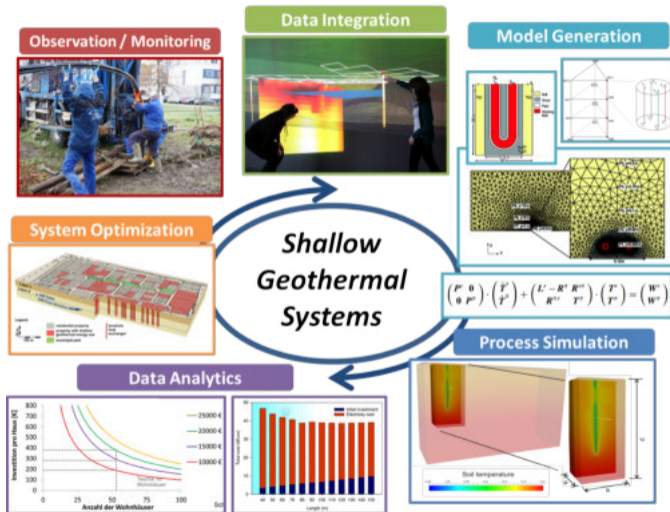
Workflows (Hydrologie)



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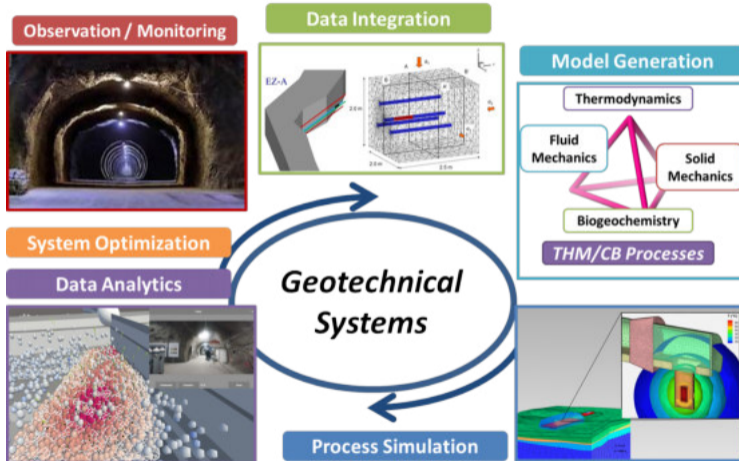
Workflows (Geothermie)



Notizen:

- ...

Workflows (Geotechnik)



Notizen:

- ...

Umweltinformationssysteme: Chaohu

OpenGeoSys





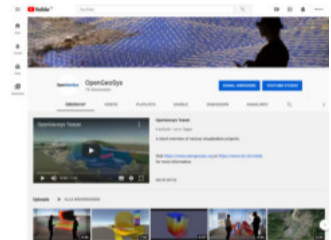


Chaohu Lake

Environmental Information System (EIS)
Monitoring data from the lake and urban observatory as well as model results will be integrated in an EIS and provided to the local stakeholder and authorities for water management.



AL.VIS | TIMESERIES



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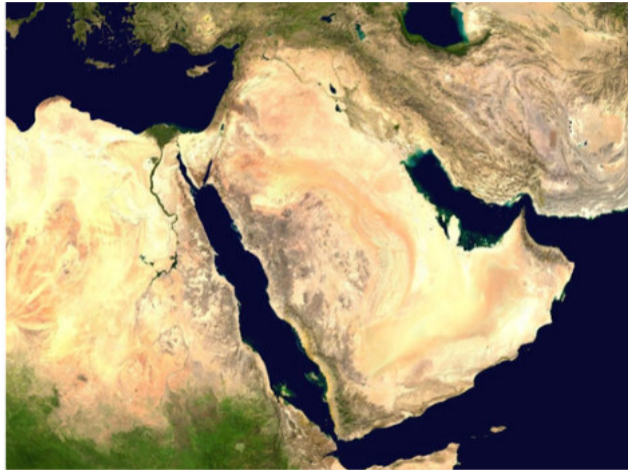
- OGS@YouTube
- ...

Mega-Aquifers: Saudi Arabien

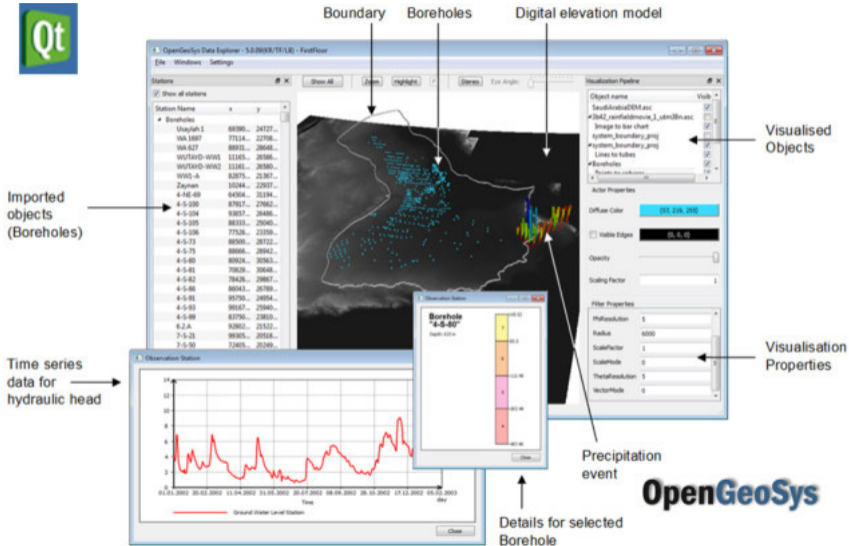


Dornier Consulting

gtz

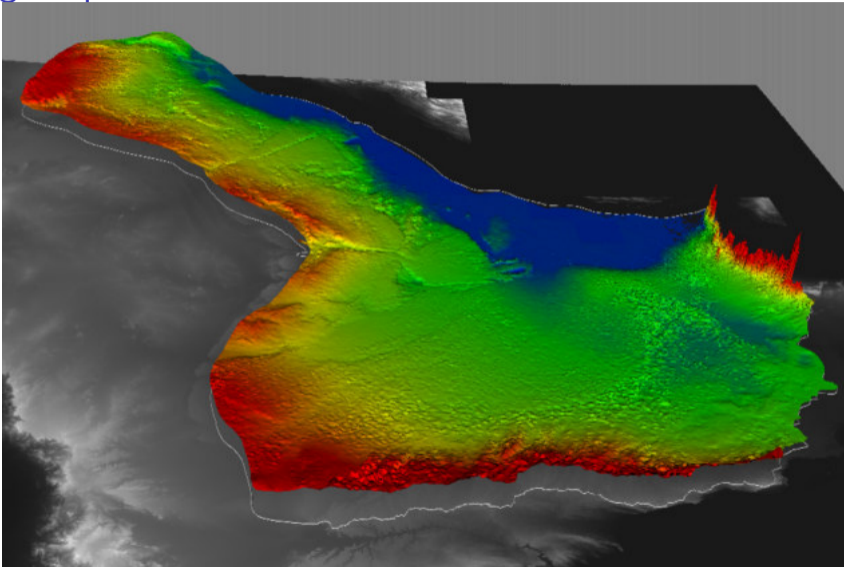


Mega-Aquifers: Saudi Arabien

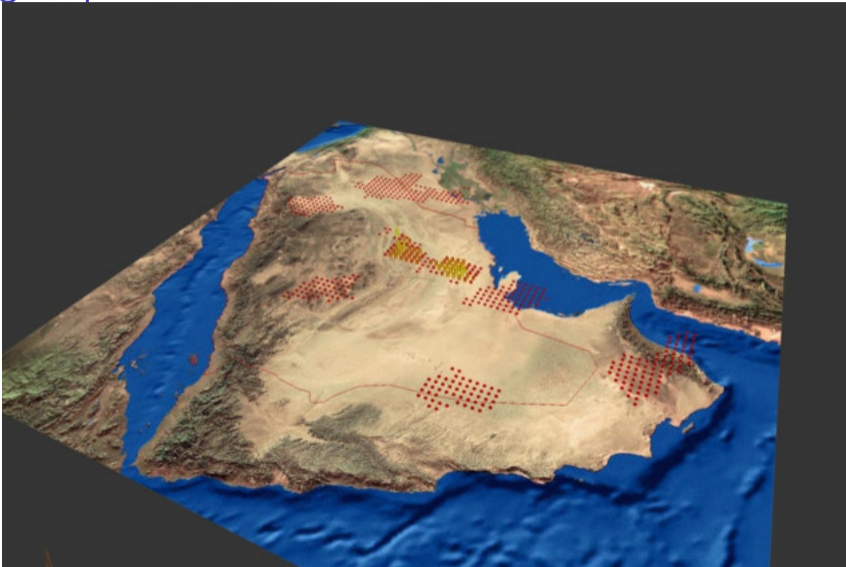


OpenGeoSys

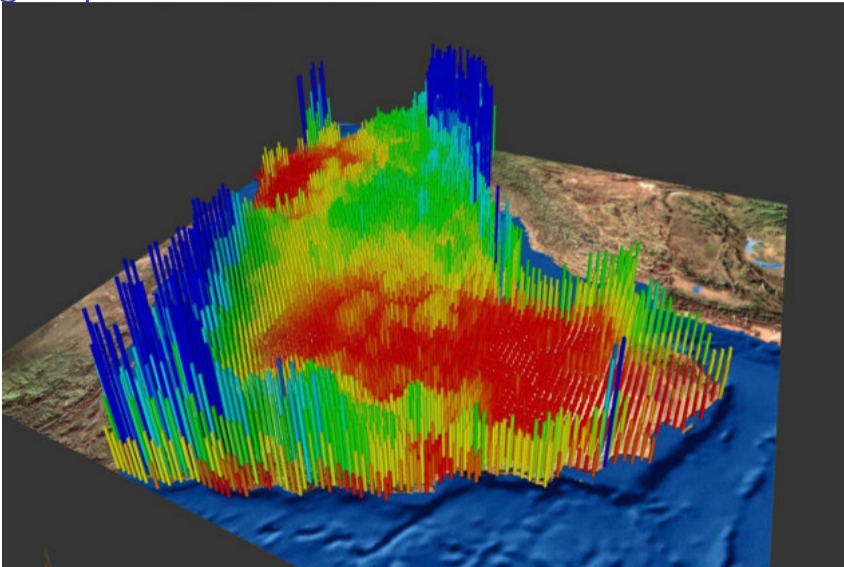
Mega-Aquifers: Saudi Arabien



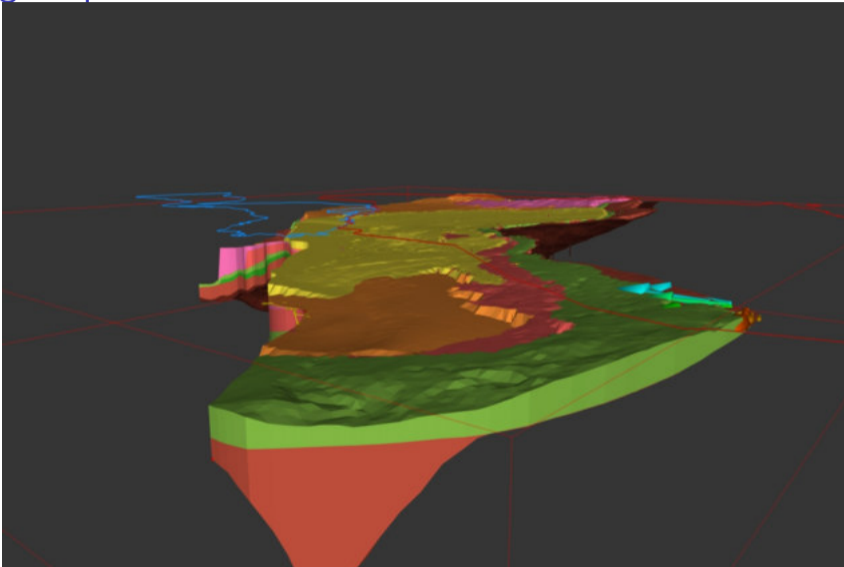
Mega-Aquifers: Saudi Arabien



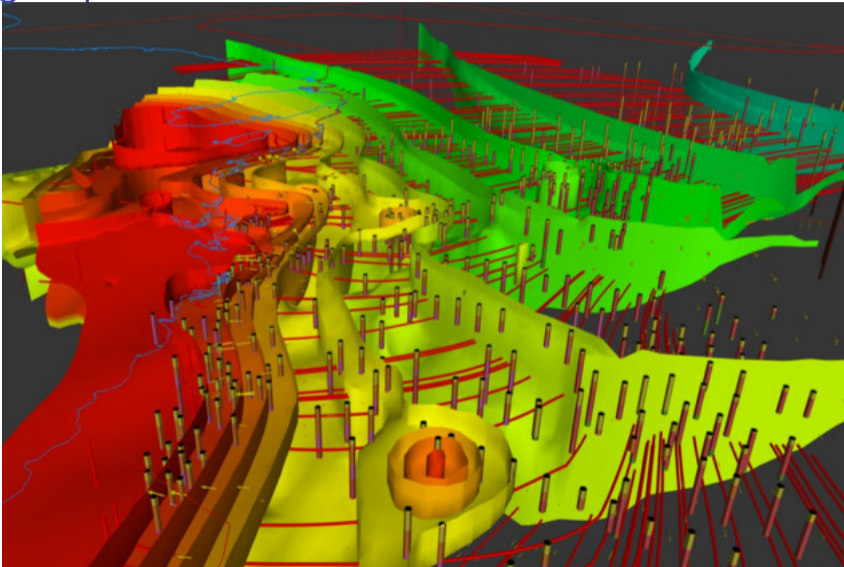
Mega-Aquifers: Saudi Arabien



Mega-Aquifers: Saudi Arabien



Mega-Aquifers: Saudi Arabien



OpenGeoSys @ YouTube

Suchen

OpenGeoSys
79 Abonnenten

KANAL ANPASSEN YOUTUBE STUDIO

ÜBERSICHT VIDEOS PLAYLISTS KANÄLE DISKUSSION KANALINFO

OpenGeosys Teaser
9 Aufrufe · vor 6 Tagen
A short overview of various visualisation projects.
Visit <https://www.opengeosys.org> or <https://www.ufz.de/vislab> for more information.

MEHR INFOS

Uploads ▶ ALLE WIEDERGEBEN

0:50 7:53 0:39 0:54 5:26

OpenGeoSys
workflows

Notizen:

- ...

<https://www.youtube.com/user/OpenGeoSys>

Hydrologische Systemanalyse

Methoden

Hydroinformatik (Lehrinhalte)

1. Grundlagen der objekt-orientierten Programmierung (C++)
2. Grundlagen der hydrologischen Modellierung
 - ▶ GIS (Catchment-Analysen ...)
 - ▶ Netzwerk-Modelle (ANN, Bayessche Netze)
 - ▶ Konzeptionelle Modelle (HRU ...)
 - ▶ Numerische Methoden (prozess-basierte, Mehrfeldproblemen ...)

Selbststudium (Hausaufgaben)

HA01: Werkzeuge

- Compilerinstallation (C++): MinGW
- Python
- ...

`https://www.ufz.de/index.php?de=40416`