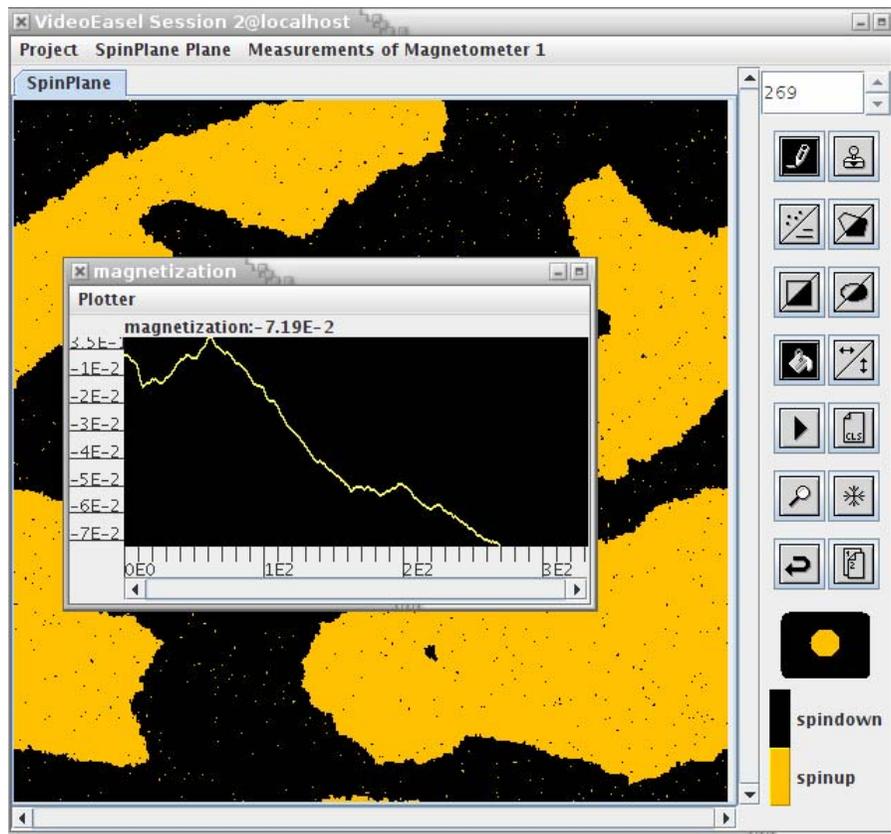
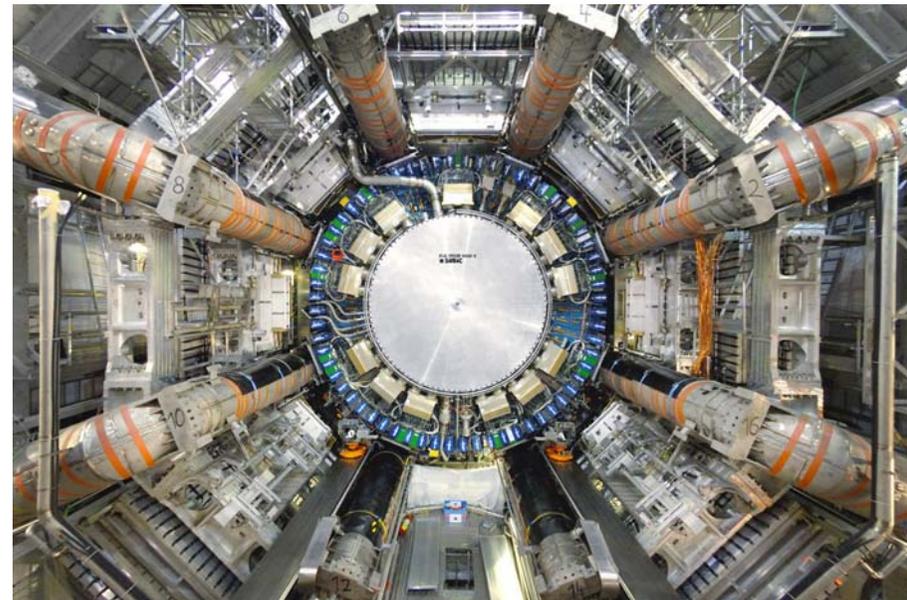


Forschungsdaten und virtuelle Forschungsumgebungen – Neue Herausforderungen für Bibliotheken: „LiLa“ und „BW-eLabs“



<http://www.lila-project.org/content/ustutt/index.html>



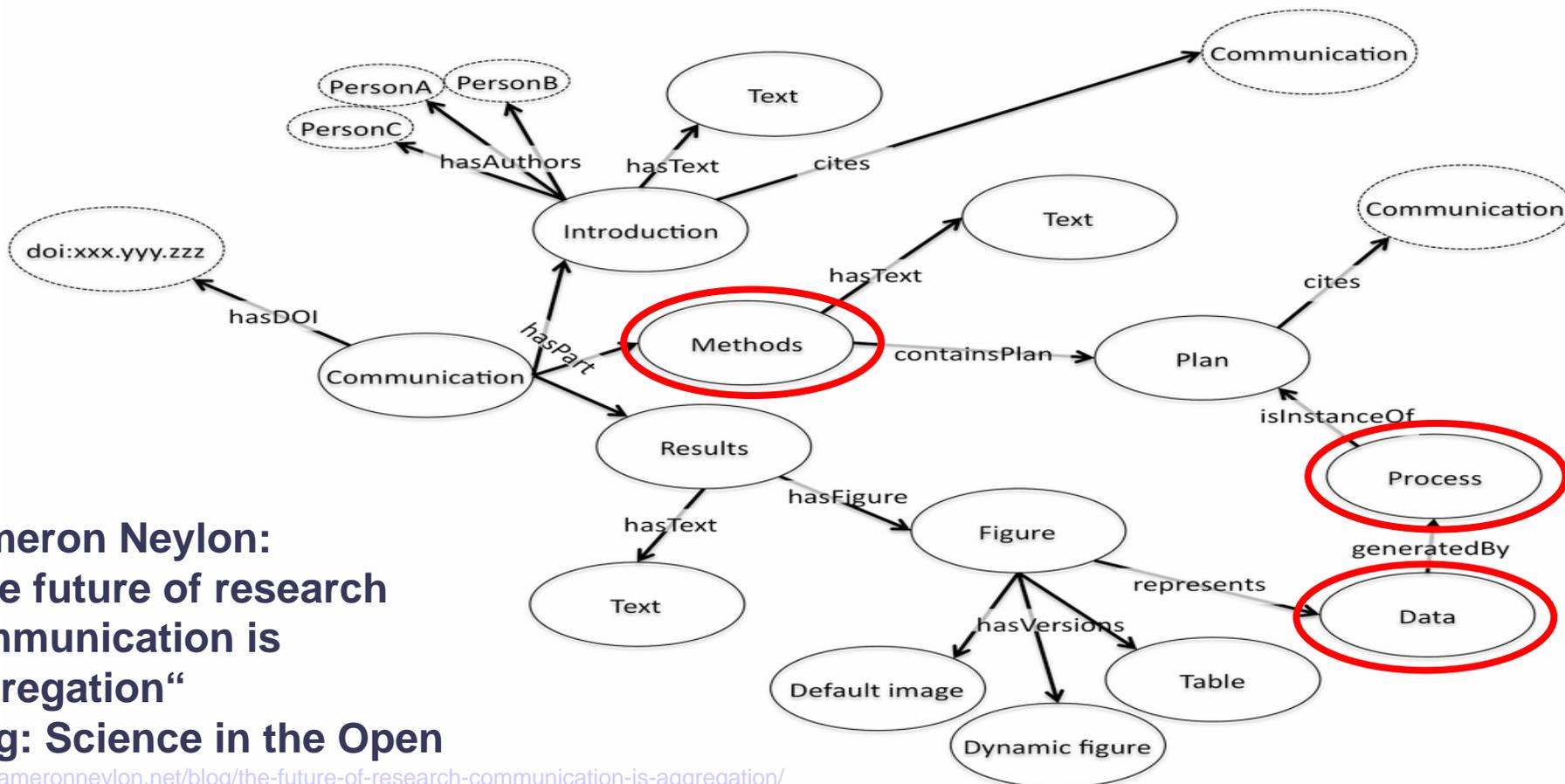
<http://cdsweb.cern.ch/record/1057769>

Matthias Schulze
Universitätsbibliothek Stuttgart

Überblick

- Einführung
- Motivation – Perspektiven (OPUS)
- „LiLa“ und „BW-eLabs“
- Beispiele
- Zusammenfassung – Ausblick

Einführung: Die Zukunft der Forschungs- / Wissenschaftskommunikation



Cameron Neylon:
„The future of research
communication is
aggregation“
Blog: Science in the Open

<http://cameronneylon.net/blog/the-future-of-research-communication-is-aggregation/>

<http://www.flickr.com/photos/24801682@N08/4506964677/sizes//>

Einführung: Wo positionieren sich die Bibliotheken?

Fragen:

- Neue Aufgaben für Bibliotheken?
- Themen der Zukunft?
- Wie sehen wissenschaftliche Publikationen in der Zukunft aus?

Themen:

- Vernetzung – Verlinkung
- Abbildung des Forschungsprozesses – kollaboratives Arbeiten
- Multimedia, Kommunikative (2.0) Elemente ...
- Virtuelle Forschungsumgebungen, Forschungsdaten ...

Einführung: Zukunftsthemen (I)

DINI-Arbeitsgruppen

- E-Framework
- E-Learning
- Elektronisches Publizieren
- Internationale Standardisierung in der digitalen Informationsbeschaffung
- Lernräume
- Videokonferenztechnologien und ihre Anwendungsszenarien (VIKTAS)
- Virtuelle Forschungsumgebungen



DEUTSCHE INITIATIVE
FÜR NETZWERKINFORMATION E.V.

Einführung: Zukunftsthemen (II)

Kommission "Zukunft der Informationsinfrastruktur" (KII) - Übersicht der Arbeitsgruppen

- AG Lizenzierung
- AG Hosting / Langzeitarchivierung
- AG nichttextuelle Materialien
- AG Retrodigitalisierung / kulturelles Erbe
- **AG Virtuelle Forschungsumgebungen**
- AG Open Access / elektronisches Publizieren
- AG Forschungsdaten
- AG Informationskompetenz / Ausbildung

Einführung: Zukunftsthemen (III) – Aktuelles

➤ **4. Leipziger Kongress für Bibliothek und Information:**

„Menschen wollen Wissen!“, 15.-18. März 2010:

Blockveranstaltung: „**Bibliotheken als Akteure im Forschungsdatenmanagement**“

- „Forschungsdaten 2010: Relevanz, Positionen und Akteure“
- „Zitierfähige Forschungsdaten und die Rolle von Bibliotheken“
- Beispiele: Archäologie, Natur-/Ingenieurwissenschaften, Wirtschaftswissenschaften, Linguistik

<http://www.opus-bayern.de/bib-info/>

➤ **eScience & Forschungsdatenmanagement** in Potsdam, 23.-24. März 2010

<http://iw.fh-potsdam.de/programm.html>

Motivation: Perspektiven der UB Stuttgart

Perspektive 1:

- **Bündelung** des Outputs von Wissenschaftlern der Universität Stuttgart
- **Nachweis** „aller“ Publikationen / Publikationsformen an einem Ort (**Hochschulschriftenserver der Universität: OPUS**)
- Traditionelle Formen: Dissertationen, Habilitationen, Aufsätze ...
- ... aber nun zusätzlich auch: *Forschungsdaten* und *Virtuelle Forschungsumgebungen*

Perspektive 2:

- OPUS-Community: Ausweitung der Funktionalitäten der **OPUS-Software** um neue Komponenten (Forschungsdaten / VRE)

OPUS: Hintergründe

- Projekt/Produkt der Universität Stuttgart (UB und Rechenzentrum) in enger Abstimmung mit dem BSZ (Verbundzentrale des SWB) in Konstanz seit Projektbeginn
- **OPUS** = **O**nline-**P**ublikationsverbund **U**niversität **S**tuttgart
 - Projektphase: Mai 1997 – September 1998
 - Produktionsbetrieb OPUS 1.2: März 1998
 - OPUS 2.0 Juli 2002
 - OPUS 2.1 Januar 2005
 - OPUS 3.0 Februar 2006
 - OPUS 3.1 Februar 2007
 - OPUS 3.2/3.3 Juni 2008/Juni 2009
- OPUS-Community – Kooperative Entwicklung
- Seit 2006 übernahm das BSZ verstärkt Support (Geschäftsstelle) und Hosting
 - *OPUS 4* März 2010 (*Entwicklungsrelease*)

OPUS: Bestandsaufnahme

- OPUS ist eine **Open-Source-Software zum Betrieb von fachlichen und institutionellen Repositorien**
- Web-Anwendung, basierend auf Open-Source-Standardsoftware (PHP, MySQL, Apache, ...)
- Einfache Veröffentlichung, Erschließung, Administration und Recherche elektronischer Publikationen
- Offenes System: OAI- und weitere Schnittstellen
- **Credo** von Beginn an: „OPUS ist aufgrund seiner Architektur ein technisch **einfach zu installierendes und zu betreibendes System**, das im Produktionsbetrieb **sehr stabil und wartungsarm** läuft ...“

OPUS: Sichtbarkeit und Vernetzung

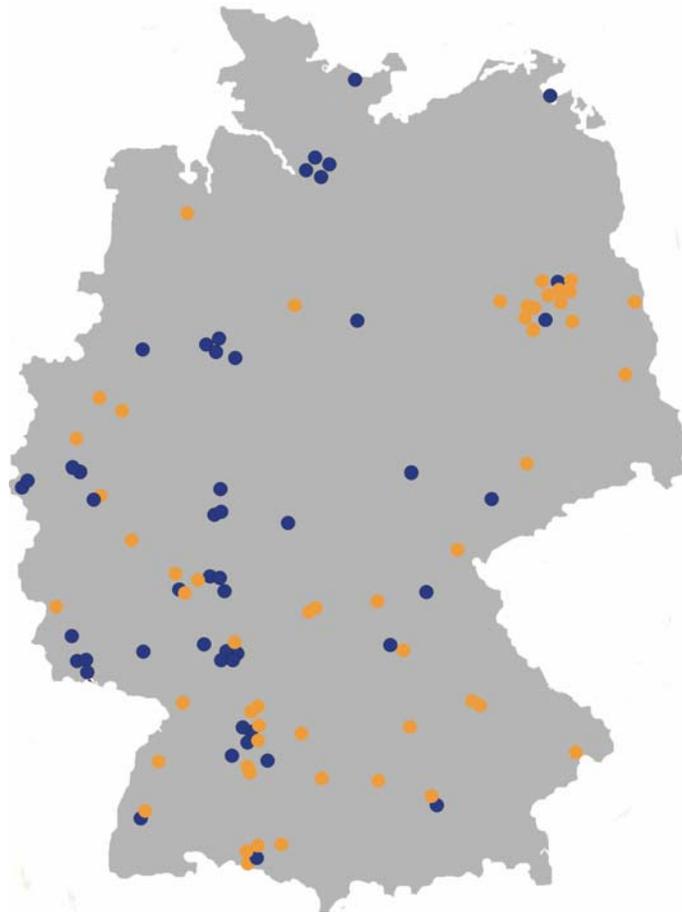
- Einbindung der vorgehaltenen Dokumente in
 - lokale Kataloge
 - Verbünde (SWB ...)
 - DNB
 - übergreifende Suchdienste (Google, Google Scholar, BASE, OAIster, SCIRUS etc.)
 - Forschungsinformationssysteme
 - den Kontext der (inter-)nationalen Vernetzung von Repositorien (wie z.B. OA-Netzwerk und DRIVER)

OPUS: Anwender (I)

- Insgesamt sind uns momentan **101** produktive **Repositorien** auf OPUS-Basis bekannt http://samos.bsz-bw.de/index.php?id=85&no_cache=1
- 40 Universitäten (mit 50 Instanzen)
- 40 Fachhochschulen
- Zentral- und Landesbibliotheken (Berlin, Potsdam)
- einige institutionelle Anwender (Institute, Akademien und Forschungszentren: Helmholtz-Zentrum, BBAW, Friedrich-Ebert-Stiftung, Berufsverband BIB ...)

Etwa die Hälfte der OPUS-Repositorien werden für die Einrichtungen von Bibliotheksverbänden gehostet: KOBV/BVB, hbz und SWB.

Verbreitung der OPUS-Software in Deutschland



- **Orange:** Hosting der OPUS-Installationen durch
 - Hochschulbibliothekszentrum NRW (hbz)
 - Bibliotheksservice - Zentrum Baden - Württemberg (BSZ)
 - Kooperativer Bibliotheksverbund Berlin - Brandenburg (KOBV) in Allianz mit dem Bibliotheksverbund Bayern (BVB)
- **Blau:** Betrieb durch die Einrichtungen (Bibliotheken) selbst

Quelle: <http://www.opus-bayern.de/bib-info/volltexte/2010/894/pdf/OPUS.pdf>

LiLa – BW-eLabs

„LiLa“ und „BW-eLabs“ als komplementäre Projekte:

- **Themen:**
 - Wissensmanagement in virtuellen und ferngesteuerten (remote) Laboren
 - Erweiterung des Zugriffs auf heterogene experimentelle Ressourcen
- **Ziele:** nachhaltige Erschließung und Nutzung von Forschungsdaten, Experimenten und Laborumgebungen für Forschungs- und Ausbildungszwecke
- **Bibliothekarische Aufgaben:** Anbindung der Forschungsdaten, Experimente und Labore an die bibliothekarische Welt (über Repositories, Kataloge)
- **Ergebnisse:** jeweils ein Portal mit Zugriff auf die Ressourcen, aber eben auch die bibliothekarische Ein-/Anbindung

LiLa: Library of Labs – Dissemination of Remote and Virtual Laboratories for Natural Sciences and Engineering



The screenshot shows the homepage of the LiLa (Library of Labs) website. The header features the LiLa logo and the title "Library of Labs" in a purple banner. Below the banner is a navigation menu with links for Home, About, LiLa Content, Resources, and Contact. The main content area is divided into two columns. The left column contains the following text:

You are at this point: Home

LiLa - Library of Labs

"LiLa" is the acronym for the "Library of Labs", an initiative of eight universities and three enterprises, for the mutual exchange of and access to

- virtual laboratories (simulation environments) and
- remote experiments (real laboratories which are remotely controlled via the internet).

LiLa builds a portal which grants the access to virtual labs and remote experiments. It includes services like a

- scheduling system,
- connection to library resources,
- tutoring system,
- 3D-environment for online collaboration.

Moreover LiLa creates an organisational framework for the exchange of experiments between institutions and for the access to experimental setups. Supporting this, LiLa provides contract templates for institutions and didactical help for lecturers for the integration of remote and virtual experiments into curricula. Primary target groups of LiLa are university teachers and their students in undergraduate and graduate classes of the natural sciences and engineering.

Learn more by watching the LiLa presentation: "[15 questions & answers about LiLa](#)".

<http://www.lila-project.org/>

The right column features a European Union flag and the text "co-funded by the Community Programme eContentplus". Below this is a "News" section with several entries:

- LiLa special session during EDUCON 2010 in Madrid**
3/24/10 The project LiLa will stage a special session during the IEEE EDUCON conference 2010 in Madrid.
- LiLa Meeting in Madrid**
3/24/10 The 5th LiLa Project Meeting will take place in Madrid on April, 12th and 13th.
- LiLa Meeting in Munich**
1/14/10 Project Meeting on 14./15. January 2010
- LiLa Meeting in Delft**
10/1/09 1./2. October 2009 Meeting of the LiLa project partners.
- LiLa Website online!**
8/14/09 The LiLa project website with information about LiLa, the project goals and partners, and additional resources is now online.

LiLa



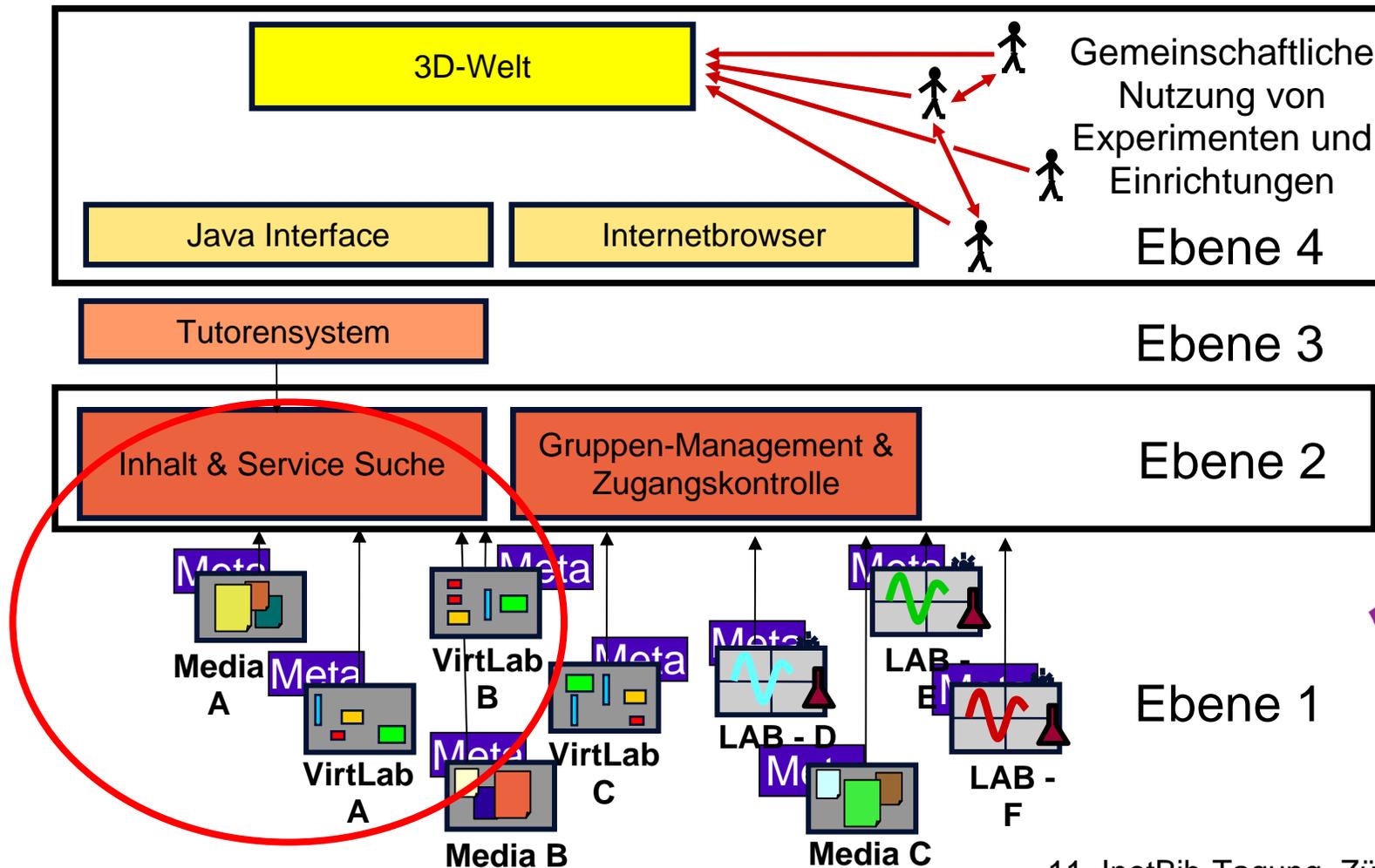
- **Förderung** durch die Europäische Union: „eContentPlus“
- **Laufzeit:** Mai 2009 – Mai 2011
- **11 Partner** aus 7 Ländern
- **Schwerpunkt:** virtuelle und remote Labore in den Natur- und Ingenieurwissenschaften: Simulationen und ferngesteuerte Labore/Experimente
- **Zielrichtung:** eLearning, mit Fokus auf den Einsatz in der Lehre



Lila: Projektpartner

-  Universität Stuttgart (Koordination)
-  Technische Universität Berlin
-  Sun Microsystems
-  Aristotle University of Thessaloniki
-  Technische Universiteit Delft
-  Linköpings Universitet
-  MathCore Engineering AB
-  Universität Basel
-  Universidad Politécnica de Madrid
-  University of Cambridge
-  Computational Modelling Cambridge Ltd

LiLa: Komponenten der technischen Architektur



LiLa: Bibliothekarisches

Aufgaben der UB Stuttgart

- AP 4 „Integration of Content“
- Erstellung eines Metadatenprofils
- An- und Einbindung der Labore und Experimente an/in das LiLa-Portal (und auch die Bibliothekswelt)
- KIM-Zertifizierung
- Evaluierung und Zertifizierung



<http://www.kim-forum.org/material/vortraege/bidkongress.htm>

http://www.opus-bayern.de/bib-info/volltexte/2010/929/pdf/KIM_BID2010_RuehleV3.pdf

http://www.opus-bayern.de/bib-info/volltexte/2010/921/pdf/UBS_LiLa-AP_BID2010_Spiecker.pdf

BW-eLabs: Wissensmanagement in virtuellen und remote Laboren

- **Förderung:** MWFK Baden-Württemberg, Start: 09/2009, Laufzeit: 30 Monate
- **Partner:** Uni Stuttgart, Uni Freiburg, FIZ Karlsruhe, HdM Stuttgart
- **Schwerpunkt:** Erweiterung des Zugriffs auf heterogene, experimentelle Ressourcen, nachhaltige Erschließung und Nutzung von Forschungsdaten für Forschungs- bzw. Ausbildungszwecke
- **Zielrichtung:** Forschung (Forschungsdaten)

BW-eLabs: Projektpartner

- Rechenzentrum der Universität Stuttgart (RUS)
 - Gesamtarchitektur, Projektleitung
- Institut für Technische Optik (ITO), Universität Stuttgart
 - Virtuelle Labore: Digitale Holographie
- Freiburger Materialforschungszentrum (FMF) der Universität Freiburg
 - Bereitstellung der virtuellen und remote Labore: Nanotechnologie
- FIZ Karlsruhe
 - eSciDoc (Informations-, Kommunikations- und Publikationsplattform): Forschungsdatenrepository
- Hochschule der Medien Stuttgart
 - Usability, Security

BW-eLabs: UB Stuttgart

Aufgaben

- An- und Einbindung der Forschungsdaten an/in
 - das entstehende BW-eLabs-Portal
 - OPUS
 - Portale, Kataloge
 - allgemein an die „bibliothekarische Community“
- Einbindung von wissenschaftlichen Dokumenten in die virtuellen Laborräume

BW-eLabs: Hintergrund

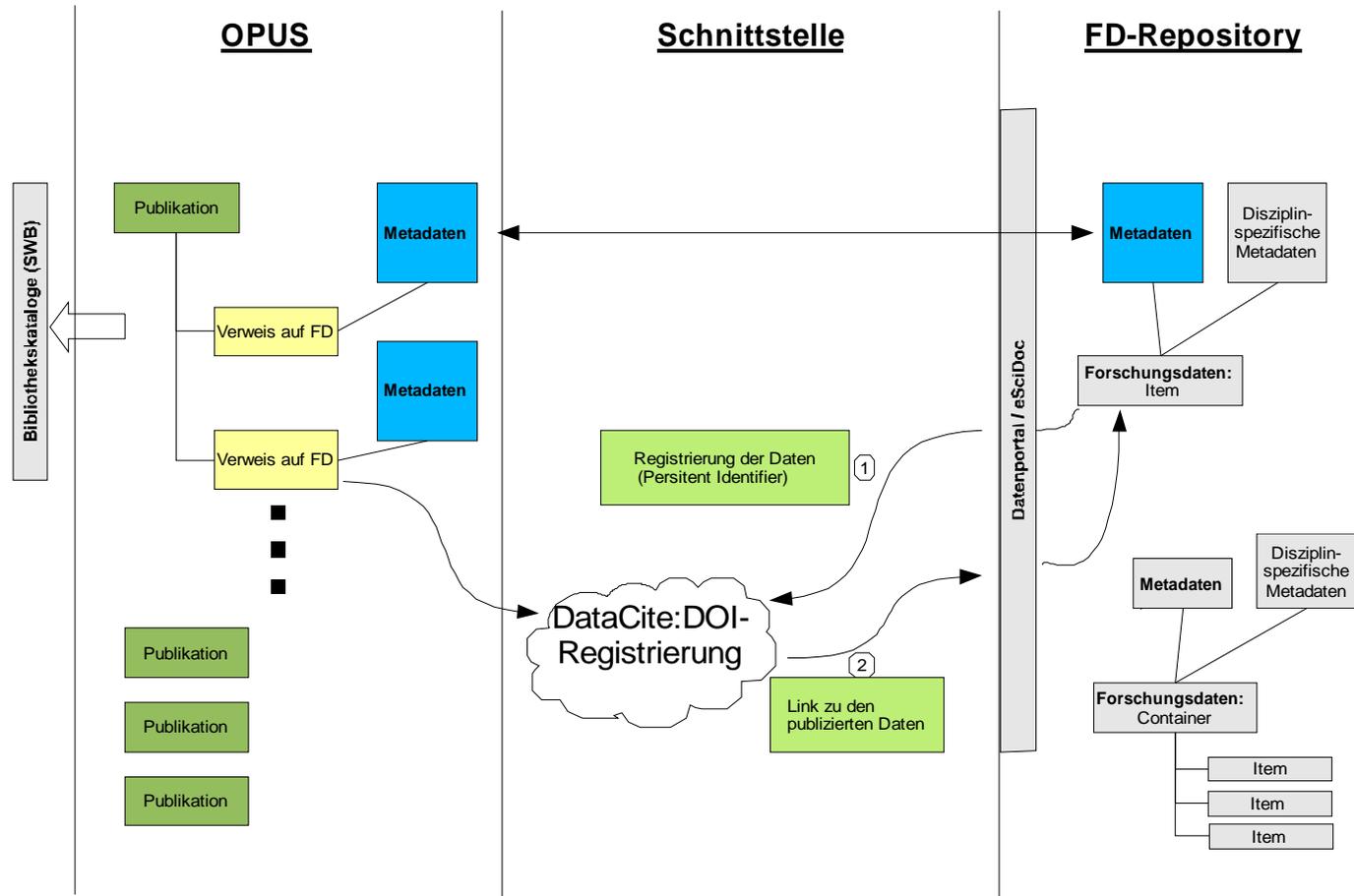
➤ Ausgangslage: Warum Nanotechnologie?

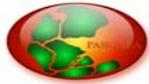
- enormer Aufwand bei der Durchführung von Experimenten, mit den entsprechenden Kosten (z.B.: Reinräume, Geräte für Mikrowellensynthese, Geräte für Analyse, Elektronenmikroskope ...)
- Ergebnis: Forschung beschränkt auf kleine Scientific Community

➤ Ziele

- Steigerung der Zugangsmöglichkeiten zu (nano-nahem) experimentellem Equipment für breite Nutzergruppe
- Vernetzung und Integration verfügbarer virtueller und remote-kontrollierbarer Labore und Forschungsinformationen in einem kooperativen Wissensraum (Portal)
- Integriertes Dokumentmanagement-System für die Archivierung von Forschungsdaten und die Nachvollziehbarkeit der Ergebnisse

OPUS-Forschungsdatenbindung





PANGAEA[®]
 Publishing Network for Geoscientific & Environmental Data

Always quote citation when using data!

[RTS](#) [BIBTeX](#)

Data Description

Citation: Yancheva, G et al. (2007): Rock magnetism and X-ray fluorescence spectrometry analyses on sediment cores of the Lake Huguang Maar, Southeast China. doi:10.1594/PANGAEA.587840.

Supplement to: Yancheva, Gergana; Nowaczyk, Norbert R; Mingram, Jens; Dulski, Peter; Schettler, Georg; Negendank, Jörg F W; Liu, Jiaqi; Sigman, Daniel M; Peterson, Larry S; Haug, Gerald (2007): Influence of the intertropical convergence zone on the East Asian monsoon. *Nature*, **445**, 74-77, doi:10.1038/nature05431

Abstract: The Asian–Australian monsoon is an important component of the Earth's climate system that influences the societal and economic activity of roughly half the world's population. The past strength of the rain-bearing East Asian summer monsoon can be reconstructed with archives such as cave deposits, but the winter monsoon has no such signature in the hydrological cycle and has thus proved difficult to reconstruct. Here we present high-resolution records of the magnetic properties and the titanium content of the sediments of Lake Huguang Maar in coastal southeast China over the past 16,000 years, which we use as proxies for the strength of the winter monsoon winds. We find evidence for stronger winter monsoon winds before the Bølling–Allerød warming, during the Younger Dryas episode and during the middle and late Holocene, when cave stalagmites suggest weaker summer monsoons. We conclude that this anticorrelation is best explained by migrations in the intertropical convergence zone. Similar migrations of the intertropical convergence zone have been observed in Central America for the period AD 700 to 900, suggesting global climatic changes at that time. From the coincidence in timing, we suggest that these migrations in the tropical rain belt could have contributed to the declines of both the Tang dynasty in China and the Classic Maya in Central America.

Coverage: West: 110.4717 * East: 110.4717 * South: 21.2500 * North: 21.2500
 Minimum Age: 0.103 ka BP * Maximum Age: 16.453 ka BP

Event(s): **HUG-AC** α * Latitude: 21.2500 * Longitude: 110.4717 * Elevation: -13.3 m * Location: Lake Huguang Maar, Southeast China α * Device: Core α
HUG-B α * Latitude: 21.2500 * Longitude: 110.4717 * Elevation: -13.3 m * Location: Lake Huguang Maar, Southeast China α * Device: Core α
HUG-C α * Latitude: 21.2500 * Longitude: 110.4717 * Elevation: -13.3 m * Location: Lake Huguang Maar, Southeast China α * Device: Core α

Size: 4 datasets

Download Data

Download **ZIP** file containing all datasets as tab-delimited text (use the following character encoding:)

Datasets listed in this Collection

1. Yancheva, G; Nowaczyk, NR; Mingram, J et al. (2007): Geochemistry of sediment core HUG-C of Lake Huguang Maar, Southeast China. doi:10.1594/PANGAEA.587835
2. Yancheva, G; Nowaczyk, NR; Mingram, J et al. (2007): Magnetic susceptibility of sediment core HUG-AC of Lake Huguang Maar, Southeast China. doi:10.1594/PANGAEA.587833
3. Yancheva, G; Nowaczyk, NR; Mingram, J et al. (2007): Rock magnetic of sediment core HUG-AC of Lake Huguang Maar, Southeast China. doi:10.1594/PANGAEA.587832
4. Yancheva, G; Nowaczyk, NR; Mingram, J et al. (2007): X-ray fluorescence spectrometry investigation of sediment core HUG-B of Lake Huguang Maar, Southeast China. doi:10.1594/PANGAEA.587839

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Beispielhafte Umsetzung: 1) PANGAEA – TIB – GBV – „Nature“



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Yancheva | Suchen

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Ihre Aktion suchen [und] (alle Wörter [ALL]) Yancheva 1 von 2

Titel: [Rock magnetism and X-ray fluorescence spectrometry analyses on sediment cores of the Lake Huguang Maar, Southeast China, supplementary data to: Yancheva, Gergana; Nowaczyk, Norbert B; Mingram, Jens; Dulski, Peter; Schettler, Georg; Negendank, Jörg F W; Liu, Jiagi; Sigman, Daniel M; Peterson, Larry S; Haug, Gerald \(2007\): Influence of the intertropical convergence zone on the East Asian monsoon. Nature, 445, 74-77.](#)

Verfasser: [Yancheva, Gergana](#) ; [Nowaczyk, Norbert B](#) ; [Mingram, Jens](#) ; [Dulski, Peter](#) ; [Schettler, Georg](#) ; [Negendank, Jörg F W](#) ; [Liu, Jiagi](#) ; [Sigman, Daniel M](#) ; [Peterson, Larry S](#) ; [Haug, Gerald](#)

Erschienen: 2007-01-23

Anbieter: Bremen/Bremerhaven : PANGAEA – Publishing Network for Geoscientific & Environmental Data

Umfang: 1 Datensatz.

Anmerkung: This dataset is supplement to doi:10.1038/nature05431

Technische Angaben: Form: application/zip

Link: <http://dx.doi.org/10.1594/PANGAEA.587840>
<http://nbn-resolving.de/urn/resolver.pl?urn=nbn:de:tib-10.1594/PANGAEA.5878400>

Anmerkung: **Primaerdaten**

1 von 2 1 von 2

Nachweis der Forschungsdaten im Katalog der TIB



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Titel: Rock magnetism and X-ray fluorescence spectrometry analyses on sediment cores of the Lake Huguang Maar, Southeast China, supplementary data to: **Yancheva**, Gergana; Nowaczyk, Norbert R; Mingram, Jens; Dulski, Peter; Schettler, Georg; Negendank, Jörg F W; Liu, Jiaqi; Sigman, Daniel M; Peterson, Larry S; Haug, Gerald (2007): Influence of the intertropical convergence zone on the East Asian monsoon. Nature, 445, 74-77

Verfasser: **Yancheva**, Gergana ; Nowaczyk, Norbert R ; Mingram, Jens ; Dulski, Peter ; Schettler, Georg ; Negendank, Jörg F W ; Liu, Jiaqi ; Sigman, Daniel M ; Peterson, Larry S ; Haug, Gerald

Erschienen: 2007-01-23

Umfang: 4 Datasets

Anmerkung: This dataset is supplement to doi:10.1038/nature05431

Inhalt: The Asian-Australian monsoon is an important component of the Earth's climate system that influences the societal and economic activity of roughly half the world's population. The past

Technische Angaben: Format: application/zip

Elektronische Referenz: <http://dx.doi.org/10.1594/PANGAEA.587840>

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Letter

Nature 445, 74-77 (4 January 2007) doi:10.1038/nature05431 Received 27 January 2006; Accepted 6 November 2006

There are [Brief Communications Arising](#) (15 November 2007) associated with this document.

Influence of the intertropical convergence zone on the East Asian monsoon

Gergana Yancheva¹, Norbert R. Nowaczyk¹, Jens Mingram¹, Peter Dulski¹, Georg Schettler¹, Jörg F. W. Negendank¹, Jiaqi Liu², Daniel M. Sigman³, Larry C. Peterson⁴ & Gerald H. Haug¹

1. GeoForschungsZentrum (GFZ), Section 3.3, Telegrafenberg, Potsdam D-14473, Germany
2. Institute of Geology and Geophysics, Chinese Academy of Sciences, PO Box 9825, Beijing 100029, China
3. Department of Geosciences, Princeton University, Princeton, New Jersey 08544, USA
4. Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, Florida 33149, USA

Correspondence to: Gerald H. Haug¹ Correspondence and requests for materials should be addressed to G.H.H. (Email: haug@gfz-potsdam.de).

The Asian–Australian monsoon is an important component of the Earth's climate system that influences the societal and economic activity of roughly half the world's population. The past strength of the rain-bearing East Asian summer monsoon can be reconstructed with archives such as cave deposits^{1,2,3}, but the winter monsoon has no such signature in the hydrological cycle and has thus proved difficult to reconstruct. Here we present high-resolution records of the magnetic properties and the titanium content of the sediments of Lake Huguang Maar in coastal southeast China over the past 16,000 years, which we use as proxies for the strength of the winter monsoon winds. We find evidence for stronger winter monsoon winds before the Bølling–Allerød warming, during the Younger Dryas episode and during the middle and late Holocene, when cave stalagmites suggest weaker summer monsoons^{1,2,3}. We conclude that this anticorrelation is best explained by migrations in the intertropical convergence zone. Similar migrations of the intertropical convergence zone have been observed in Central America for the period AD 700 to 900 (refs 4–6), suggesting global climatic changes at that time. From the coincidence in timing, we suggest that these migrations in the tropical rain belt could have contributed to the declines of both the Tang dynasty in China and the Classic Maya in Central America.

Instrumental and historical records reaching back several centuries show



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Marine Micropaleontology
Volume 66, Issues 3-4, 20 February 2008, Pages 192-207

[doi:10.1016/j.marmicro.2007.09.002](https://doi.org/10.1016/j.marmicro.2007.09.002) [How to Cite or Link Using DOI](#)

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Organic matter rain rates, oxygen availability, and vital effects from benthic foraminiferal $\delta^{13}\text{C}$ in the historic Skagerrak, North Sea

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Abstract
The sediment cores 225514 and 225510 were recovered from 420 and 285 m water depth, respectively. They were investigated for their benthic foraminiferal $\delta^{13}\text{C}$ during the last 500 years. Both cores were recovered from the southern flank of the Skagerrak. The $\delta^{13}\text{C}$ values of *Uvigerina mediterranea* and other shallow infaunal species in both cores indicate that organic matter rain rates to the seafloor varied around a mean value until approximately AD 1950 after which they increased. This increase might result from changes in the North Atlantic Current System and a co-occurring persistently high North Atlantic Oscillation index state in the 1980s to 1990s, rather than from anthropogenic eutrophication. Using $\delta^{13}\text{C}$ mean values of multiple species, we reconstruct $\delta^{13}\text{C}$ gradients of dissolved inorganic carbon (DIC) within pore waters for the time periods AD 1500 to 1950 and AD 1950 to 2000. The calculated $\delta^{13}\text{C}_{\text{DIC}}$ ranges, interpreted as indicating total organic matter remineralization due to respiration, are generally bigger in Core 225514 than in Core 225510. Since mean $\delta^{13}\text{C}$ values of *U. mediterranea* suggest that organic matter rain rates were similar at both locations, differences in total organic matter remineralization are attributed to differing oxygen availability. However, oxygen concentrations in the overlying bottom water masses are not likely to have differed significantly. Thus, we suggest that organic matter remineralization was controlled by oxygen availability within the sediments, reflecting strong differences in sedimentation rates at the two investigated core sites. Based on the assumptions that tests of benthic foraminiferal species inhabiting the same microhabitat depth should show equal $\delta^{13}\text{C}$ values unless they are affected by vital effects and that *Globobulimina turgida* records pore water $\delta^{13}\text{C}_{\text{DIC}}$, we estimate microhabitat-corrected vital effects for several species with respect to *G. turgida*: > 0.7‰ for *Cassidulina laevigata*, > 1.3‰ for *Hyalinea bathica*, and > 0.7‰ for *Melonis barleeanus*. *Melonis zaandami* seems to closely record pore water $\delta^{13}\text{C}_{\text{DIC}}$.

Keywords: Benthic foraminifera; $\delta^{13}\text{C}$; Oxygen availability; Vital effect; Remineralization; Skagerrak

Article Outline
1. Introduction

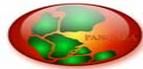
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Beispielhafte Umsetzung: 2) PANGAEA – ELSEVIER (ScienceDirect)



Data Description

RIS BibTeX

Citation: Brückner, S; Mackensen, A (2008): Stable carbon isotope composition of benthic foraminifera from sediments of the Skagerrak, North Sea. doi:10.1594/PANGAEA.676719,
Supplement to: Brückner, Sylvia; Mackensen, Andreas (2008): Organic matter rain rates, oxygen availability, and vital effects from benthic foraminiferal d13C in the historic Skagerrak, North Sea. Marine Micropaleontology, 66(3-4), 192-207. doi:10.1016/j.marmicro.2007.09.002

Reference(s): **Brückner, Sylvia (2008):** Climatic and hydrographic variability in the late Holocene Skagerrak as deduced from benthic foraminiferal proxies (Klimatische und hydrographische Variabilität im holozänen Sagerrak, abgeleitet aus benthischen Foraminiferen). *Reports on Polar and Marine Research, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, 572*, 139 pp, hdl:10013/epic.28879.d001

Abstract: The sediment cores 225514 and 225510 were recovered from 420 and 285 m water depth, respectively. They were investigated for their benthic foraminiferal delta13C during the last 500 years. Both cores were recovered from the southern flank of the Skagerrak. The delta13C values of *Uvigerina mediterranea* and other shallow infaunal species in both cores indicate that organic matter rain rates to the seafloor varied around a mean value until approximately AD 1950 after which they increased. This increase might result from changes in the North Atlantic Current System and a co-occurring persistently high North Atlantic Oscillation index state in the 1980s to 1990s, rather than from anthropogenic eutrophication. Using delta13C mean values of multiple species, we reconstruct delta13C gradients of dissolved inorganic carbon (DIC) within pore waters for the time periods AD 1500 to 1950 and AD 1950 to 2000. The calculated delta13CDIC ranges, interpreted as indicating total organic matter remineralization due to respiration, are generally bigger in Core 225514 than in Core 225510. Since mean delta13C values of *U. mediterranea* suggest that organic matter rain rates were similar at both locations, differences in total organic matter remineralization are attributed to differing oxygen availability. However, oxygen concentrations in the overlying bottom water masses are not likely to have differed significantly. Thus, we suggest that organic matter remineralization was controlled by oxygen availability within the sediments, reflecting strong differences in sedimentation rates at the two investigated core sites. Based on the assumptions that tests of benthic foraminiferal species inhabiting the same microhabitat depth should show equal delta13C values unless they are affected by vital effects and that *Globobulimina turgida* records pore water delta13CDIC, we estimate microhabitat-corrected vital effects for several species with respect to *G. turgida*: >0.7 per mil for *Cassidulina laevigata*, >1.3 per mil for *Hyalinea balthica*, and >0.7 per mil for *Melonis barleeanus*. *Melonis zaandami* seems to closely record pore water delta13CDIC.

Project(s): **Paleoenvironmental Reconstructions from Marine Sediments @ AWI (AWI_Paleo)**

Coverage: West: 8.7091 * East: 9.6214 * South: 57.8406 * North: 58.0422

Event(s): **Alkor_159_225510** * Latitude: 58.0422 * Longitude: 9.6214 * Elevation: -285.0 m * Recovery: 5.44 m * Location: Skagerrak * Campaign: AL19xx * Basis: Alkor * Device: Gravity corer
Alkor_159_225514 * Latitude: 57.8406 * Longitude: 8.7091 * Elevation: -420.0 m * Recovery: 4.05 m * Location: Skagerrak * Campaign: AL19xx * Basis: Alkor * Device: Gravity corer

Comment: Project: Integrated Baltic Sea Environmental Study (IBSEN); funded by German Ministry of Education and Research (BMBF)

Size: 5 datasets

Download Data

Download ZIP file containing all datasets as tab-delimited text (use the following character encoding: ISO 8859-1, ISO Western (PANGAEA default))

Datasets listed in this Collection

1. **Brückner, S; Mackensen, A (2008):** (Figure 3a) Stable carbon isotope ratios of benthic foraminifera from sediment core Alkor_159_225514. doi:10.1594/PANGAEA.676718
2. **Brückner, S; Mackensen, A (2008):** (Figure 3b) Stable carbon isotope ratios of benthic foraminifera from sediment core Alkor_159_225510. doi:10.1594/PANGAEA.676717
3. **Brückner, S; Mackensen, A (2008):** (Table 1) Age determination of sediment core Alkor_159_225510. doi:10.1594/PANGAEA.676716
4. **Brückner, S; Mackensen, A (2008):** (Table 3a) Paired d13C differences between *Globobulimina turgida* and *Melonis barleeanus* of sediment core Alkor_159_225514. doi:10.1594/PANGAEA.716157
5. **Brückner, S; Mackensen, A (2008):** (Table 3b) Paired d13C differences between various benthic foraminifera of sediment core Alkor_159_225510. doi:10.1594/PANGAEA.716158

Contact

Ausblick – Zusammenfassung (I)

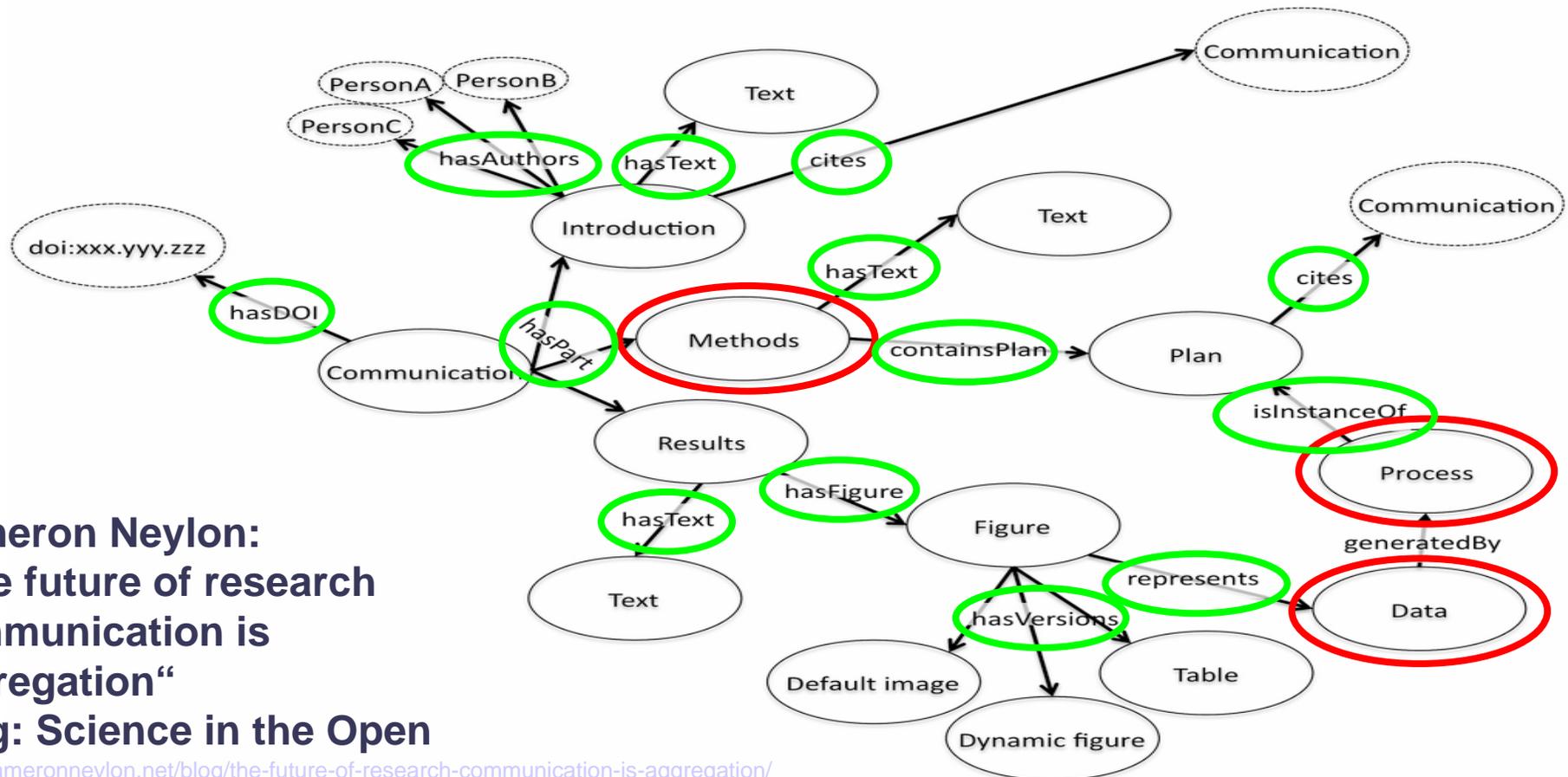
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Ausblick – Zusammenfassung (II)

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<http://www.flickr.com/photos/24801682@N08/4506964677/sizes//>



- Vielen Dank für Ihre Aufmerksamkeit!
- Gibt es Kommentare oder Fragen?

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- matthias.schulze@ub.uni-stuttgart.de