



MPRESS

and the role of

MetaData in Math-Net

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- ⌘ roland@mathematik.uni-osnabrueck.de

Content

- ⌘ MPRESS - history/present
- ⌘ Organizational Structure of Math-Net
- ⌘ Services in Math-Net
- ⌘ Underlying infrastructure
- ⌘ Last Years Work
- ⌘ Issues

...where it started

- 1992-1995 DMV Projekt Fachinformation
(database MATH)
- 1995 Software test
- Harvest - [IETF-RD]
- distributed sources, agent
- replicable
- clusters

html Meta Tag

MathN Broker

Harvesting Mathematics

Judith Plümer, Roland Schwänzl

Euromath Bulletin 2 No.1 1996

<http://www.emis.de/epub/harvest.ps.gz>

DublinCore and Warwick Framework

- 1996 AK - Technik DMV
 - AK - Inhalt DMV
-
- Warwick Container interpreted as DublinCore with Qualifiers

MetaData creation tool

- /// MMM
- /// also used in PhysNet (mediated by IuK)

Mathematics Metadata Markup 2.2

Author(s) (separate multiple authors by ;):

Musterfrau, Heidi; Mustermann, Erwin

Email address of contact person:

erwin@utopia.world

Title of paper:

Theorems on potatoe

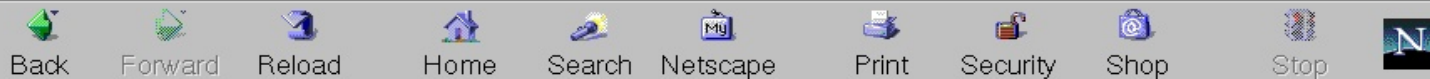
URL of paper:

http://www.utopia.world/preprints/potatoe.ps

The paper is It is written in and coded as

Series:

Papers on potatoe theory 1



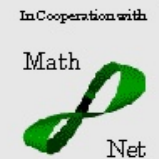
Bookmarks Location:

Internet Slot3 ELib AK-Technik Arbeitskreis für w...tliche Information



MathN

D-MathNet.Preprints



A regional Index of Mathematical Preprints

This Broker was built using the [Harvest](#) system.
You may access [Help](#) for formulating queries.

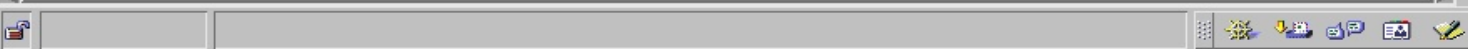
The menu form below will yield optimal results for servers supporting the [Dublin Core](#) underlying [MMM](#)
(download [MMM source](#)).

MathN © responsible: J. Plümer & R. Schwänzl

[Help](#)

Author: **MSC:** **Keywords:**

Title: **Free Text:**



1996

DC.subject	MathDMV.KEYWORDS
DC.subject (type=topic)	MathDMV.SUBJECT
DC.subject (scheme=msc91, type=primary)	MathDMV.PCLASS
DC.subject (scheme=msc91, type=secondary)	MathDMV.SCLASS
DC.subject (scheme=pacs)	MathDMV.PACS
DC.subject (scheme=cr)	MathDMV.CR
DC.description (scheme=url, type=abstract)	MathDMV.ABSTRACT
DC.description (scheme=url, type=x-notes)	MathDMV.NOTES

Dublin Core 4

- /// Canberra, March 1997
- /// DC accepts qualifiers

MathNet Project 1997-1998

- /// ZIB Berlin
- /// TU Chemnitz
- /// U Halle
- /// U Kaiserslautern
- /// U Köln
- /// TU München
- /// U Osnabrück
- /// U Paderborn
- /// U Rostok
- /// distributed system: nodes: Math-Dept's

AK Meta IuK

≡ Osnabrück, 1997

≡ <http://www.mathematik.uni-osnabrueck.de/projects/workshop97/>



Bookmarks Location: <http://mathdoc.ujf-grenoble.fr/Harvest/brokers/prepub/query.htm>

Internet Slot3 ELib AK-Technik Arbeitskreis für w...tliche Information IuK



Index de la littérature grise en mathématiques en France

Tout commentaire, demande d'ajout ou de correction sont bienvenus. Merci d'envoyer un petit message à accueil@mathdoc.ujf-grenoble.fr.

Explications sur le projet "Littérature grise en mathématiques en France"

NOUVEAU Si votre site ne participe pas encore à notre projet, vous pouvez [déclarer votre prépublication](#) sur notre serveur.

Index nationaux prépublications, thèses et habilitations

Cet index est également consultable via l'index européen [MPRESS](#). Voir aussi :

- thèses et habilitations
- prépublications
- Explications
- Sites participant au projet
- **Listes:** prépublications par auteurs / thèses et habilitations par auteurs, / thèses et habilitations par date de soutenance

Vous pouvez sélectionner: thèses et habilitations ou prépublications.

(Si vous voulez interroger sur thèses ET prépublications, ne sélectionnez rien.)

Auteur:

Mots-Clés:

Titre:

Texte du résumé:

Année:

Code de classification:

Index général (texte intégral)

- Explications
- Sites

Votre question peut être un nom d'auteur, et/ou un mot clé. Les mots sont connectés par l'opérateur "et".

MetaData Vocabulary

/// Math-Net Page: names Genre's of objects

/// Preprints

/// Persons

/// Events

/// Projects

/// Software

/// MetaData vocabularies based on DC
/// more qualifiers
/// more services

Bookmarks Location:

Internet Slot3 ELib AK-Technik Arbeitskreis für w...tliche Information luk

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Fax +49 (0)541 969 - 2770

ELib Projekt

Betreuung MPRESS

Betreuung des WWW-Servers

Interests:

- Algebraic geometry;
- K^2 -theory;
- Algebraic topology;
- mathematische Information

[Publications](#)[Further Activities](#)Member of: [DMV](#)

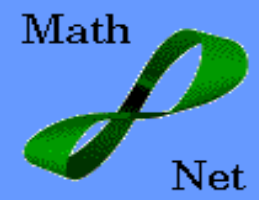
Bis zum 31. August 1999 war ich im [ELib Projekt](#) beschäftigt.

Das Projekt ELib wurde zusammen mit der Universitätsbibliothek Osnabrück durchgeführt. Förderung wurde von der DFG und dem Land Niedersachsen gewährt.

Darüber hinaus betreue ich das weltweite **Mathematics PREprint Search System** (<http://MathNet.preprints.org>).

Bis Ende 1998 war ich Mitarbeiterin im [Math-Net](#) Projekt unter Leitung des Konrad-Zuse-Zentrums für Informationstechnologie in Berlin. Gefördert wird dieses Projekt von dem Deutschen Forschungsnetz und der Deutschen Telekom.

© Dr. Judith Plümer 1999 - Jul-6



LE Mathematik Fachbereich Mathematik/Informatik



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Local Search: Use this field to search for information by keywords



IMU



CEIC Workshop



ZIB Berlin, Nov 1998



D.Morrison/Physics e-print: LANL



Bookmarks Location:

Internet Slot3 ELib AK-Technik Arbeitskreis für w...tliche Information IuK

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[Topology Atlas](#) (Preprints related to topology)

[xxx.lanl.gov e-Print archive](#) (Mathematics part of the mirror at Augsburg)

[Algebraic Number Theory Archives](#)

[K-theory Preprint Archives](#)

About MPRESS

If you want MPRESS to index your preprints, please contact: J. Plümer or R. Schwänzl.

In case you are in France, please contact [MathDoc Cell](#).

In case you are in Italy, please contact [Coordinamento SIBA - Università degli Studi di Lecce](#).

Index home: U Osnabrück <http://MathNet.preprints.org>

Replica: EMIS <http://euler.zblmath.fiz-karlsruhe.de/MPRESS>

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Title:

Free Text:

Search entire database including papers not fully equipped with MetaData:

Result presentation might be poor!

<mailto:siba@siba2.unile.it>

1. Basic Differential Forms for Actions of Lie Groups

Peter W. Michor

Proc. AMS 124, 5 (1996) 1633–1642

[Source file](#)

Primary MSCClassification: 57S15 20F55

Upload: 27 Apr 1994

Update: 14 Nov 1994

More: esi087.html on:www.esi.ac.at

2. Bounds on the Multiplicity of Eigenvalues for Fixed Membranes

Thomas Hoffmann–Ostenhof, Peter W. Michor, Nikolai Nadirashvili

ESI preprints

[Source file](#)

Primary MSCClassification: 35B05 35P15 58G25

Upload: 15 Dez 1997

Update: 20 Jul 1998

More: esi514.html on:www.esi.ac.at

3. On the Geometry of the Virasoro–Bott Group

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[Peter W. Michor](#)

[Basic Differential Forms for Actions of Lie Groups](#)

The paper is published: Proc. AMS 124, 5 (1996) 1633–1642

[MSC:](#)

57S15 Compact Lie groups of differentiable transformations

20F55 Coxeter groups, See also [{22E40}](#)

Abstract: A section of a Riemannian G -manifold M is a closed submanifold S which meets each orbit orthogonally. It is shown that the algebra of G -invariant differential forms on M which are horizontal in the sense that they kill every vector which is tangent to some orbit, is isomorphic to the algebra of those differential forms on S which are invariant with respect to the generalized Weyl group of S , under some condition.

Keywords: *Orbits, sections, basic differential forms*



34	Ordinary differential equations	54	search	browse
35	Partial differential equations	230	search	browse
39	Finite differences and functional equations	6	search	browse
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42	Fourier analysis	36	search	browse
43	Abstract harmonic analysis	3	search	browse
44	Integral transforms, operational calculus	9	search	browse
45	Integral equations	37	search	browse
46	Functional analysis	55	search	browse
47	Operator theory	60	search	browse
49	Calculus of variations and optimal control; optimization	40	search	browse
51	Geometry	28	search	browse
52	Convex and discrete geometry	42	search	browse
53	Differential geometry	67	search	browse
54	General topology	26	search	browse

1. More: [AlgGeo_I.ps.gz](#) on:ftp.mathematik.uni-osnabrueck.de
2. More: [iterated_monoidal.ps.gz](#) on:ftp.mathematik.uni-osnabrueck.de
3. More: [pr94013.ps.gz](#) on:www.mathematik.uni-bielefeld.de
4. More: [hollender.ps.gz](#) on:ftp.mathematik.uni-osnabrueck.de
5. More: [topologie.ps.gz](#) on:ftp.mathematik.uni-osnabrueck.de
6. More: [pr94028.ps.gz](#) on:ftp.mathematik.uni-osnabrueck.de
7. More: [algebra_I.ps.gz](#) on:ftp.mathematik.uni-osnabrueck.de
8. **Preprints of SFB 343**
More: [sfb343.html](#) on:www.mathematik.uni-osnabrueck.de
9. More: [pr94028.ps.gz](#) on:www.mathematik.uni-bielefeld.de

[Help](#)[Browse MSC](#)

Author:

Keywords:

Title:

Free Text:

MPRESS today

- ▤ about 40 000 papers
- ▤ about 110 sources, gatherers, brokers



Internationalization of Math-Net

- International Mathematical Union
- IMU Charta May 2000
- IMU Committee on Electronic Information and Communication
 - <http://www.ceic.math.ca>
- Math-Net Technical Advisory Board,
<http://www.mathematik.uni-osnabrueck.de/TAB/>

MetaData architecture?

- /// diverse object types
- /// coverage of dc15
- /// object linking
- /// transition between services (texts and facts)
- /// internationalization (label)
- /// deficits with HTML Meta
- /// (grouping problems, 1:1)
- /// terms & conditions
- /// annotation of MetaData
- /// semantic network

Carmen Project 1999 - 2002

MetaData

- document/service description
- formal identification
- authentication
- terms and conditions/archiving
- linking

Heterogeneity

Retrieval

<http://www.mathematik.uni-osnabrueck.de/projects/carmen/>

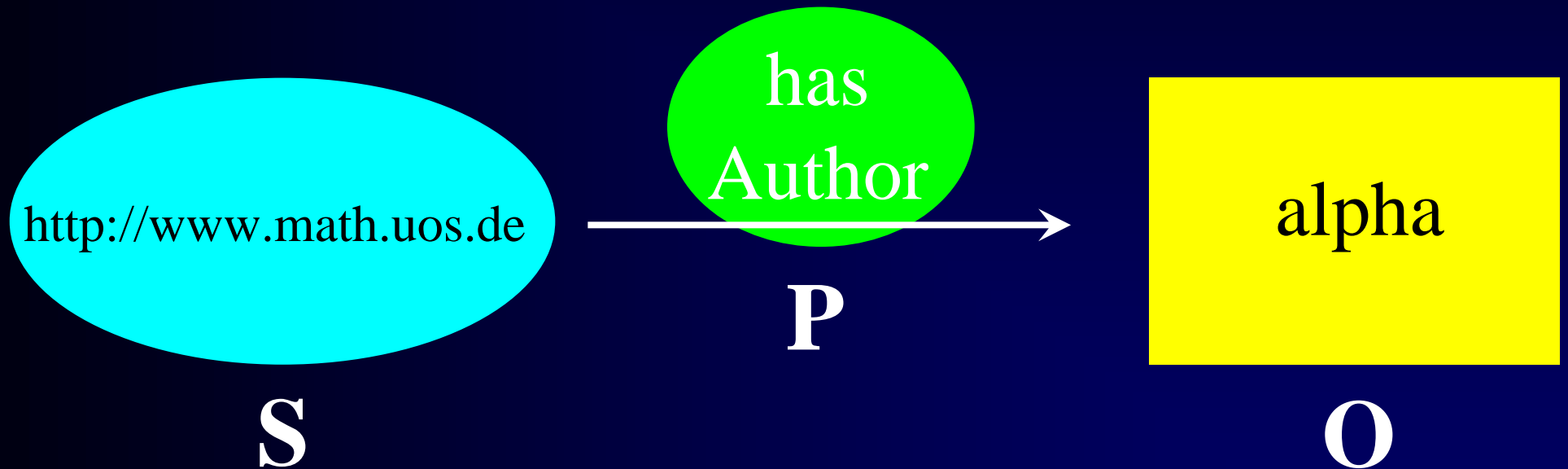


Sustainability

- ⌘ Digitale Signaturen & Metamaker mit Dokumentenupload für ein verteiltes Informationssystem
TU München, U Oldenburg
- ⌘ Metadaten für Terms & Conditions/Metadaten für Archivierung
SUB Göttingen, TU München, Springer-Verlag
- ⌘ Persistent Identifiers & Metadata Management in Science
UB Oldenburg, Deutsche Bibliothek, FIZ Karlsruhe
- ⌘ Metadata based Indexing of Scientific Resources
U Osnabrück, Springer-Verlag, UB Osnabrück
- ⌘ A Document Referencing and Linking System
U Dortmund, ZIB Berlin, UOsnabrück
- ⌘ Fachübergreifende Informationssysteme
U Oldenburg, UOsnabrück
- ⌘ Heterogenitätsbehandlung
IZ Soz - U Koblenz, U Osnabrück
- ⌘ Konkordanz von Klassifikationen und Thesauri
UB Regensburg
IZ Soz - U Koblenz, Deutsche Bibliothek

RDF - W3C Rec 22 Feb 1999

≡ assertions:





Why RDF

- Container: Bag, Seq, Alt
- Repeat
- Reification
- Labeled directed graphs - not just trees
- subClasses, subProperties: prepares for higher layers
- Extensability



RDF: machine understandable semantics

- Part of semantic web initiative W3
- Capability to encode semantic nets on the web
- Why use a standard...why not proprietary solutions:
 - Worldwide System, Costs for tool development, interoperability with/of independently operated resources.



Use of RDF

- ⌘ Exists embedding of Qualified DublinCore
- ⌘ Open for special needs, extensions: eventually implements the DC Warwick Framework.
- ⌘ Simple way of integrating distributed sources of classification/thesauri like structured vocabularies
- ⌘ Mathematical Resources....
- ⌘ We don't know all - can name a few Classes
- ⌘ Extensibility



MetaData in Math-Net

- RDFS/XML Namespaces
- ApplicationProfiles: Abstraction of MetaData
 - (<http://www.iwi-iuk.org/material/RDF/1.1/profile/MNPage/>)
- MetaData creation Tools for specific object types:
 - Preprints (Version 3.0), Persons,
 - Institutions (Math-Net Page)
 - (<http://www.mathematik.uni-osnabrueck.de/TAB/meta/applic.shtml>)