LEIBNIZ-INFORMATIONSZENTRUM
TECHNIK UND NATURWISSENSCHAFTEN
UNIVERSITÄTSBIBLIOTHEK

TIB

The ”one stop shop“ for multimedial mathematical knowledge – experience the TIB's AV-Portal for Maths

Matti Stöhr
15th September 2020
Contribution for the Minisymposium: A Research Infrastructure Tailored for Mathematics in the Digital Age at DMV-JT 2020

Leibniz Gemeinschaft

Agenda

1. **The TIB and TIB AV-Portal in a nutshell**

2. Mathematical media in TIB‘s AV-Portal
   - Lecture videos
   - Recordings of conferences
   - Interviews
   - Visual simulations
   - Video abstracts

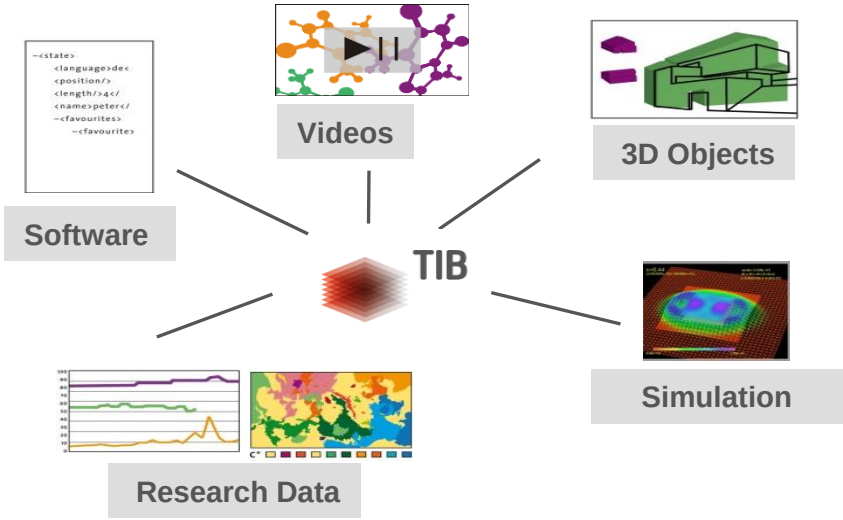
3. Visibility and Sharing

4. Summary

5. Q&A

German National Library of Science and Technology (TIB)

- The Leibniz Information Centre for Science and Technology and University Library
- The German National Library for science and technology
- The worlds largest science and technology library
- An infrastructure provider for the scientific work process
- TIB-Strategy: Move beyond text
- Competence Centre for Non-Textual Materials



1 The TIB AV-Portal in a nutshell

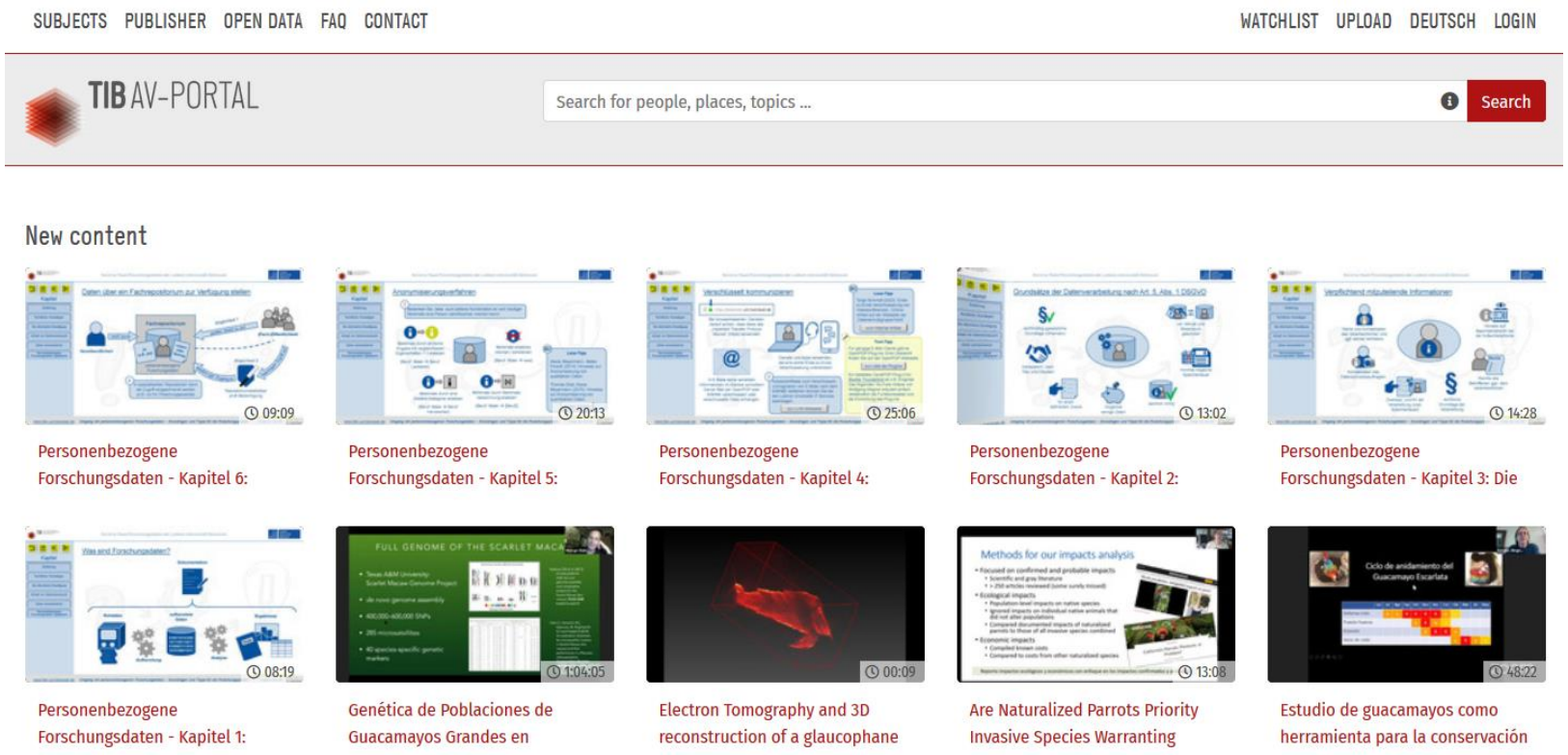
Overview

Profile

- Free portal for quality-proofed scientific AV media from technology & sciences (focus)

Development

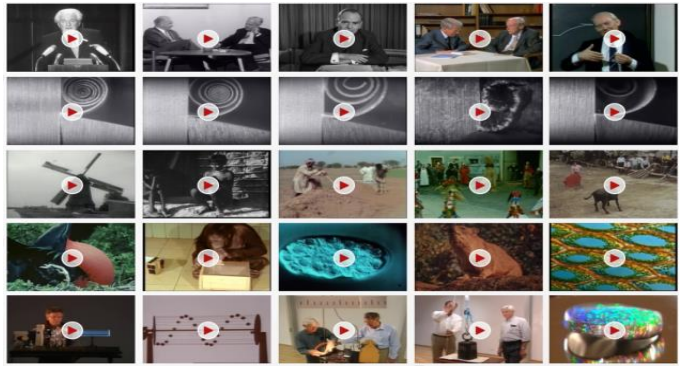
- TIB and HPI / Yovisto
- Online since spring 2014
- From project to regular service
- Continually improvement



1 The TIB AV-Portal in a nutshell

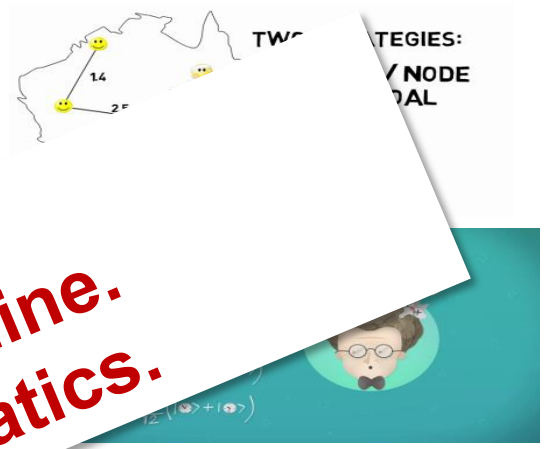
Contents

IWF



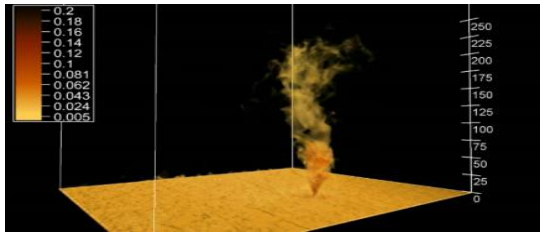
Conferences

Video Abstracts

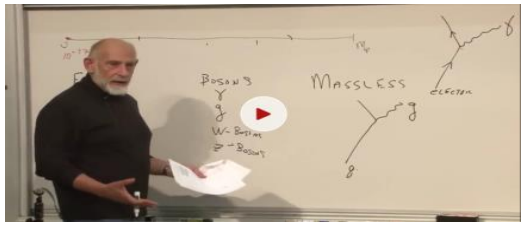


Over 27.000 videos findable,
over 25.000 videos viewable online.
About 2800 videos on mathematics.

Interviews/Documentaries



Teaching



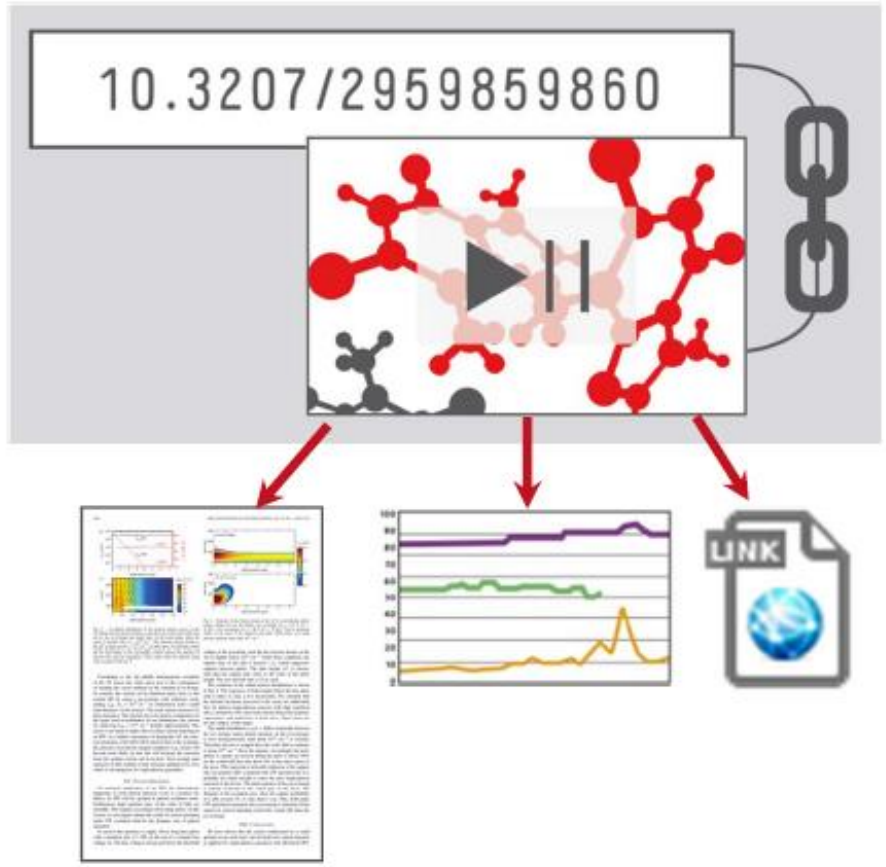
1 The TIB AV-Portal in a nutshell

Services / functions / unique selling points

- Hosting & long term preservation
- Metadata enrichement (standardised by using authority files)
- Permanent citeability with DOI & MFID
- Crosslinking to related information - paper, research data, profile, …
- Semantic search
- Publication practices in conformity with the law

➢ **Free of charge**

- Conference recording service (TIB ConRec)
- Events: workshops / lectures …



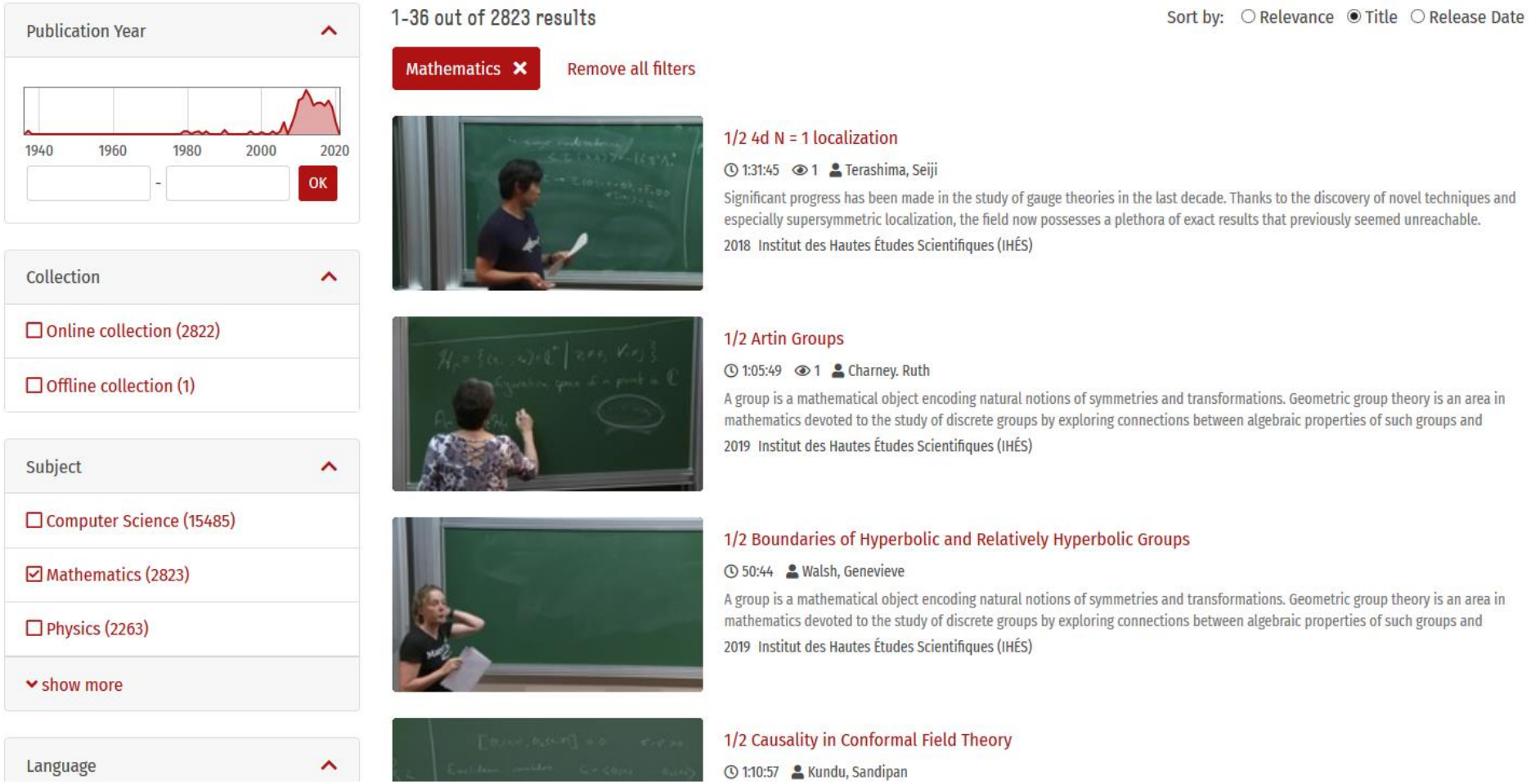
1 The TIB AV-Portal in a nutshell

Automatic video analysis

- Scene Recognition
- Voice Recognition
- Text Recognition
- Visual Concept Detection
- Named Entity Recognition

2 Mathematical media in TIB‘s AV-Portal

Lecture videos



2 Mathematical media in TIB‘s AV-Portal
Recordings of conferences

Publication Year

2019 2020 2021

- OK

Collection

- ☐ Online collection (29)

Subject

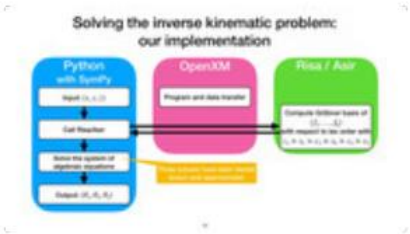
- ☐ Mathematics (23)
- ☐ Computer Science (9)
- ☐ Information Science (2)

Language

1-29 out of 29 results

Sort by: ◉ Relevance ○ Title ○ Release Date

International Congress on Mathematical Software (ICMS) 2020 ✕ Remove all filters



A Design and an Implementation of an Inverse Kinematics Computation in Robotics Using Gröbner Bases

14:20 34 Horigome, Noriyuki et al.

The solution and a portable implementation of the inverse kinematics computation of a 3 degree-of-freedom (DOF) robot manipulator using Gröbner bases are presented. The main system was written Python with computer algebra system SymPy. Gröbner bases are

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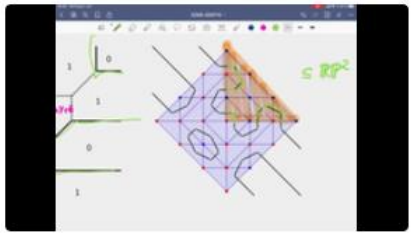

Real tropical hyperfaces by patchworking in polymake

17:16 28 Joswig, Michael

Hilbert's 16th problem asks to classify the isotopy types of real algebraic hypersurfaces in projective space. In the 1980s Viro developed patchworking as a method to construct real algebraic hypersurfaces with unsually large mod 2 Betti numbers. Interpreted within the

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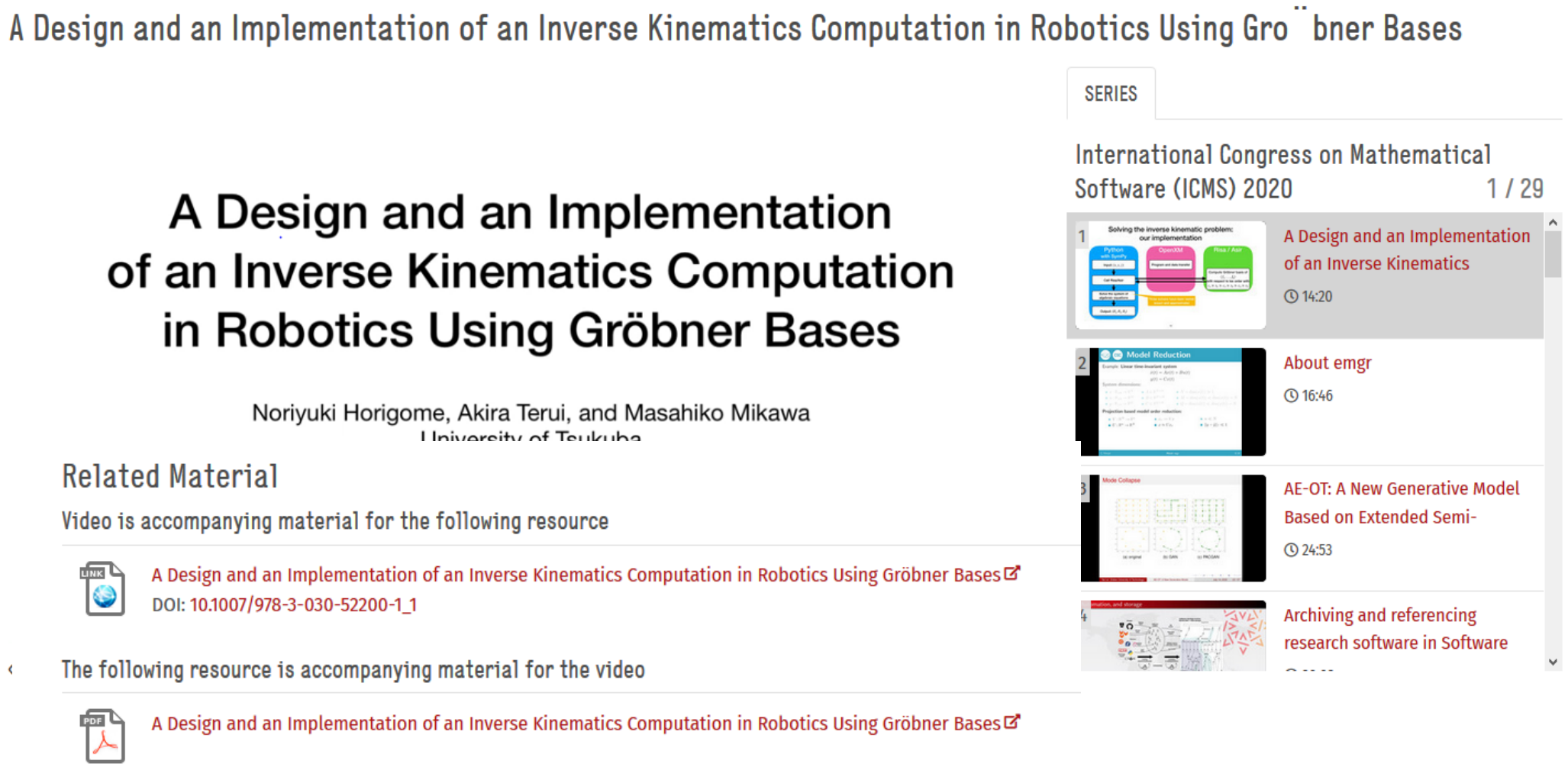
Operational Research Literature as a Use Case for the Open Research Knowledge Graph

17:19 26 Auer, Sören et al.

The Open Research Knowledge Graph (ORKG) provides machine-actionable access to scholarly literature that habitually is written in prose. Following the FAIR principles, the ORKG makes traditional, human-coded knowledge findable, accessible, interoperable, and

2020 Technische Universität Braunschweig

2 Mathematical media in TIB‘s AV-Portal
Recordings of conferences



2 Mathematical media in TIB‘s AV-Portal

Interviews

Publication Year

2016 2017 2018 2019 2020 2021

OK

Collection

- [ ] Online collection (49)

Subject

- [x] Mathematics (49)
- [ ] Computer Science (48)

Language

- [ ] English (49)

1-36 out of 49 results

Sort by: (•) Relevance ( ) Title ( ) Release Date

The HLF Portraits ✕ Mathematics ✕ Remove all filters

The HLF Portraits: Fernando J. Corbato

1:05:23 12 Corbato, Fernando J.

The Heidelberg Laureate Forum Foundation presents the HLF Portraits: Fernando J. Corbato; ACM A.M. Turing Award, 1990 Recipients of the ACM A.M. Turing Award and the Abel Prize in discussion with Marc Pachter, Director Emeritus National Portrait Gallery, Smithsonian

2017 Heidelberg Laureate Forum Foundation

The HLF Portraits: Bob Tarjan

53:01 1 Tarjan, Bob

The Heidelberg Laureate Forum Foundation presents the HLF Portraits: Bob Tarjan; Nevanlinna Prize, 1982 & ACM A.M. Turing Award, 1986 Recipients of the ACM A.M. Turing Award and the Abel Prize in discussion with Marc Pachter, Director Emeritus National Portrait

2017 Heidelberg Laureate Forum Foundation

The HLF Portraits: Leslie Lamport

1:02:23 Lamport, Leslie

The Heidelberg Laureate Forum Foundation presents the HLF Portraits: Leslie Lamport; ACM A.M. Turing Award, 2013 Recipients of the the Abel Prize, the ACM A.M. Turing Award, the ACM Prize in Computing, the Fields Medal and the Nevanlinna Prize in discussion with

2019 Heidelberg Laureate Forum Foundation

2 Mathematical media in TIB‘s AV-Portal
Visual simulations – problem of diverse publication

6. arXiv:1702.01519 [pdf, ps, other]
Diffusion-driven self-assembly of rod-like particles: Monte Carlo simulation on a square lattice
Nikolai I. Lebovka, Yu. [illegible]ovich, Volodymyr A. Gigiberiya, Nikolai V. Vygornitskii
Comments: 12 pages, 14 figs, 3 videos, 53 refs. Submitted to Phys. Rev. E
Subjects: **Statistical Mechanics (cond-mat.stat-mech)**

7. arXiv:1701.07861 [pdf, other]
Diversity and coevolutionary dynamics in high-dimensional phenotype spaces
Michael Doebeli, Iaroslav Ispolatov
Comments: 49 pages, 6 figures, and 5 videos; please open pdf with Acrobat to see the embedded movies
Journal-ref: The American Naturalist 2017 189 105-120
Subjects: **Populations and Evolution (q-bio.PE)**

8. arXiv:1701.07769 [pdf, ps, other]
Ethical Considerations in Artificial Intelligence Courses
Emanuelle Burton, Judy Goldsmith, Sven Koenig, Benjamin Kuipers, Nicholas Mattei, Toby Walsh
Comments: 29 pages including all case studies and links to video media on YouTube
Subjects: **Artificial Intelligence (cs.AI)**; Computers and Society (cs.CY); General Literature (cs.GL)

9. arXiv:1701.07479 [pdf, other]
Epidemiological modeling of the 2005 French riots: a spreading wave and the role of contagion
Laurent Bonnasse-Gahot, Henri Berestycki, Marie-Aude Depuiset, Mirta B. Gordon, Sébastien Roché, Nancy Rodriguez, Jean-Pierre Nadal
Comments: 16 pages, 6 figures, 2 SI pages, 3 SI figures, 4 SI videos (the SI videos are included in the source package, and are also available here: this http URL)
Subjects: **Physics and Society (physics.soc-ph)**; Social and Information Networks (cs.SI)

10. arXiv:1701.07372 [pdf, other]
A Multi-view RGB-D Approach for Human Pose Estimation in Operating Rooms
Abdolrahim Kadkhodamohammadi, Afshin Gangi, Michel de Mathelin, Nicolas Padoy
Comments: WACV 2017. Supplementary material video: this https URL
Subjects: **Computer Vision and Pattern Recognition (cs.CV)**

11. arXiv:1701.07256 [pdf, ps, other]
Skyrmion-Antiskyrmion pair creation by in-plane currents
Martin Stier, Wolfgang Häusler, Thore Posske, Gregor Gurski, Michael Thorwart
Comments: Please find additional videos of the skyrmion-antiskyrmion pair creation process on the article's arXiv page. The videos can also be downloaded from the "other formats" section as a compressed file
Subjects: **Mesoscale and Nanoscale Physics (cond-mat.mes-hall)**

Where?

Embedded in PDF

Youtube

Source package

Private webpage

Other formats section

2 Mathematical media in TIB‘s AV-Portal
Visual simulations

Atmos. Chem. Phys., 16, 7067–7090, 2016
https://doi.org/10.5194/acp-16-7067-2016

Volume 16, issue 11

Research article

10 Jun 2016

Using a combined power law and log-normal distribution model to simulate particle formation and growth in a mobile aerosol chamber

Miska Olin et al.

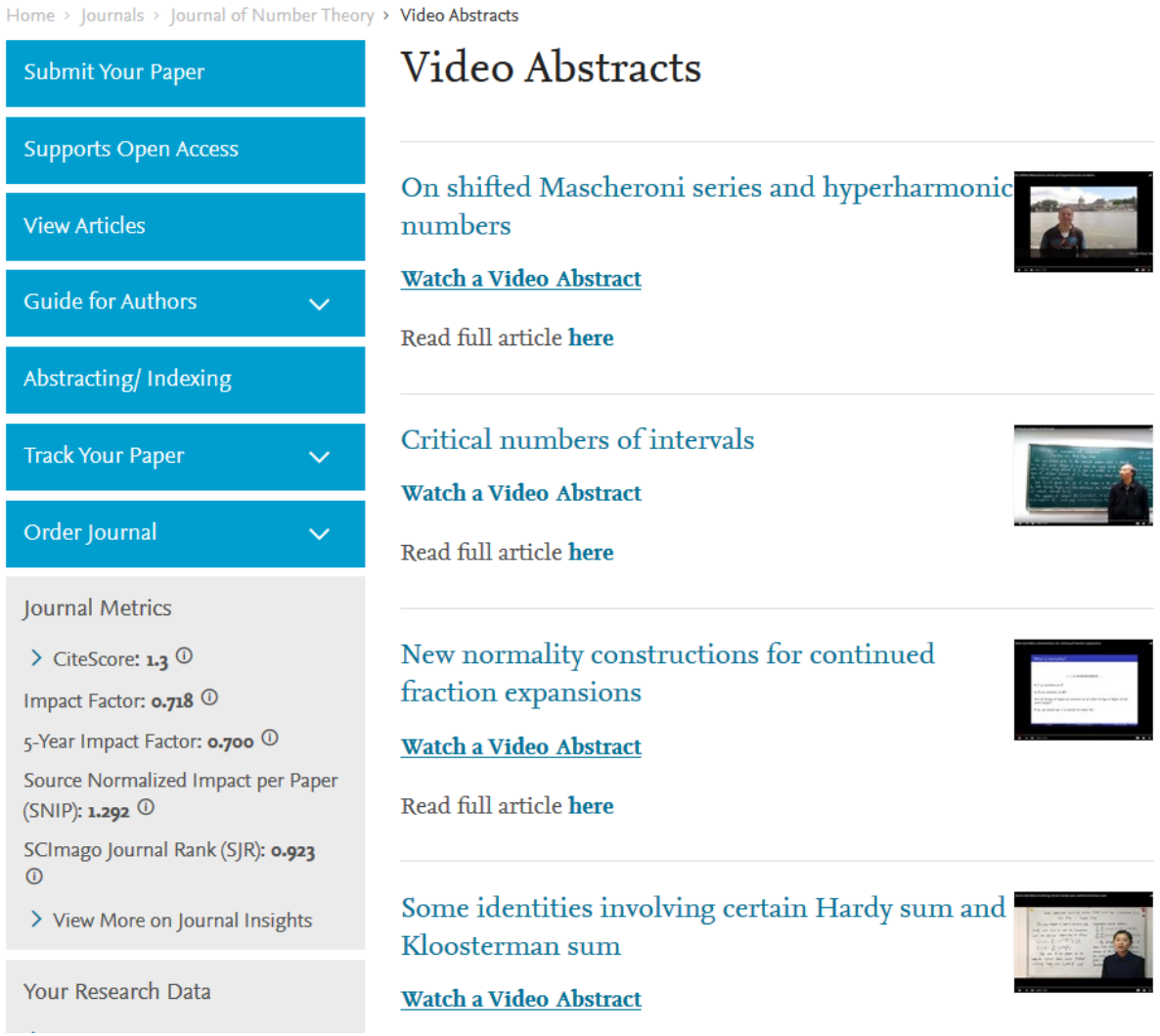
Supplement

https://doi.org/10.5194/acp-16-7067-2016-supplement

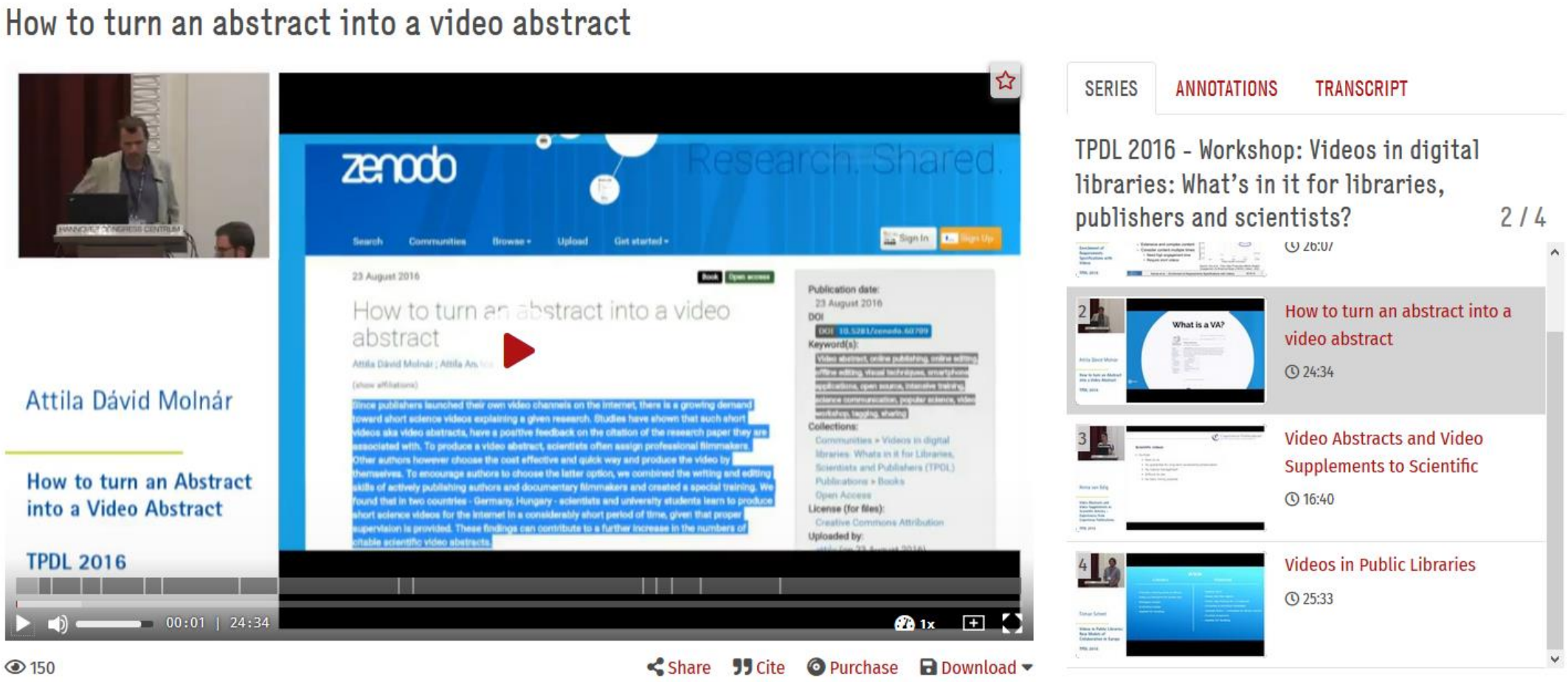
Video supplement

Comparison of the particle size distributions simulated by the sectional model (FS1000), the log-normal distribution model (LN), and the combined power law and log-normal distribution model (PL+LN)
Miska Olin
http://dx.doi.org/10.5446/18564

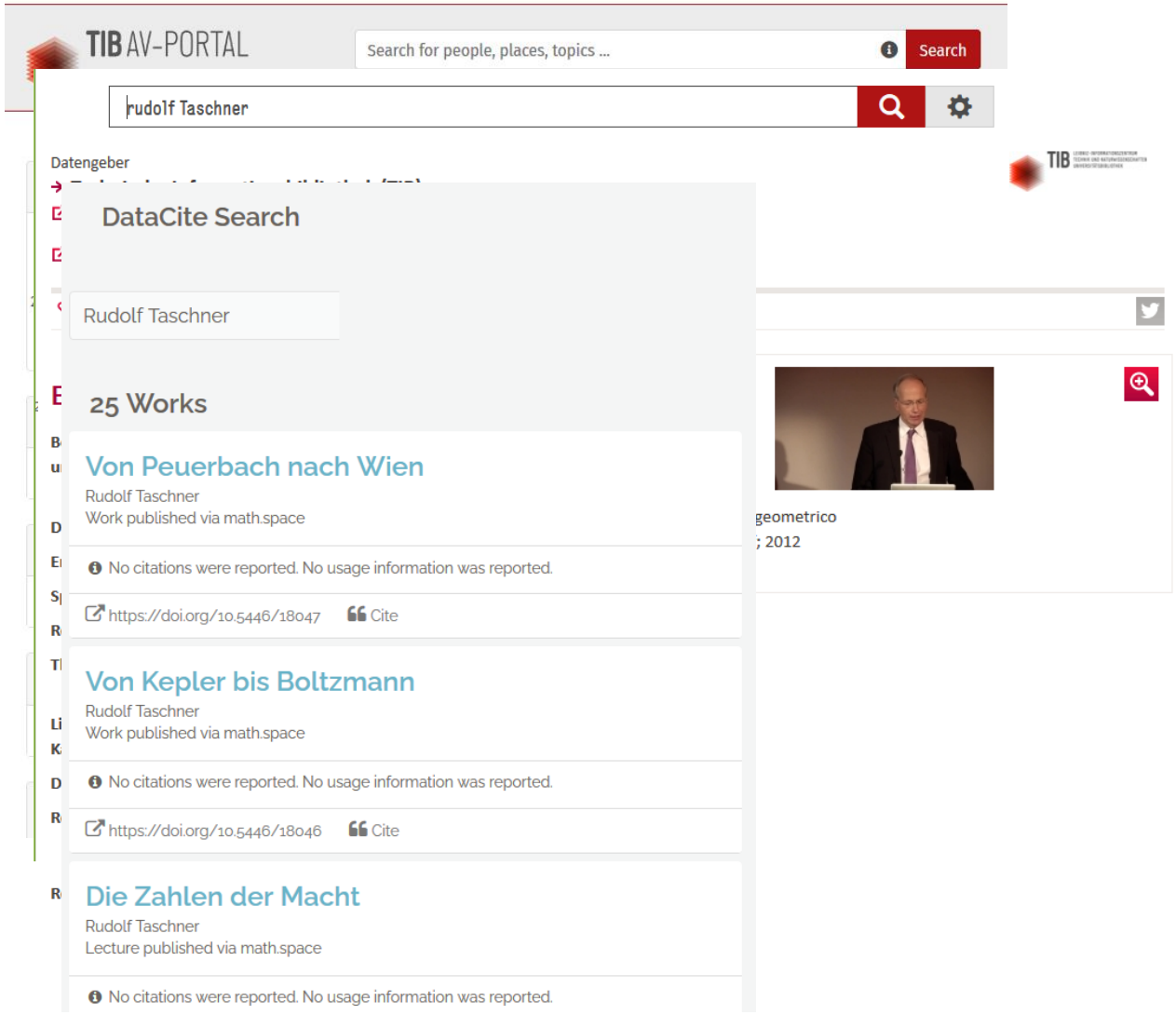
2 Mathematical media in TIB‘s AV-Portal
Video abstracts



2 Mathematical media in TIB‘s AV-Portal
Video abstracts



3 Visibility and sharing



ORCID

Connecting Research and Researchers

Weblinks [Bearbeiten | Quelltext bearbeiten]

- **Commons: Christian Spannagel** – Sammlung von Bildern, Videos und Audiodateien
- Fakultätsseite der PH Heidelberg von Christian Spannagel
- Blog von Christian Spannagel
- Blog zum MOOC „Mathematisch denken!“
- MOOC „Mathematisch denken!“
- Account von Christian Spannagel auf dem ZUM-Wiki
- YouTube-Account von Christian Spannnagel
- Videos von und über Christian Spannagel im AV-Portal der Technischen Informationsbibliothek

4 Summary

- Scientific videos are important resources

- Stable and sustainable infrastructure is necessary
  - Citation, DOI, long term preservation, …

- Videos may increase the visibility of your research
  - Simulations, video abstracts, social media, Wikipedia -> Open Science

- TIB AV-Portal: platform for scientific videos
  - "… *optimal solution for hosting scientific videos"*
  - *"… all necessary features (issuing of DOIs, preservation, accessibility, licencing, and back-linking to the article) are provided."*

van Edig, X. (2016). Video abstracts and video supplements to scientific articles – experiences from Copernicus Publications. Zenodo. http://doi.org/10.5281/zenodo.59819, p.6

4 Summary

Searching and publishing scientific videos: The TIB AV-Portal in 120 seconds

https://doi.org/10.5446/22006

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Thank you!

MORE INFORMATION

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