

Integrating distributed expertise

The Subject Guide of the Physics Virtual Library ViFaPhys



The Physics Virtual Library?

- ▶ Initiated and funded by the German Research Foundation DFG.
- ▶ **Central access point to information and services relevant to physicists.**
- ▶ Included resources mainly accessible via Internet.
- ▶ Includes the following modules:
 - Subject Guide
 - Databases
 - Further services

The Physics Virtual Library



ViFaPhys - The Physics Virtual Library - Microsoft Internet Explorer bereitgestellt von UB/TIB Hannover

Adresse <http://vifaphys.tib.uni-hannover.de/index.php?lang=en&dir=gulpage-index.html>

The Physics Virtual Library **ViFaPhys**
A Service of the TIB

- Subject Guide**
Collection of selected information resources for physicists, evaluated and described by experts. Realised with the collaboration of a special interest group on information of the German Physical Society.
Still under construction
- TIBORDER**
Search the TIB library holdings (books, articles, conference papers, etc.) with document delivery service.
- Databases**
Compilation of databases relevant to physics.
- GetInfo**
Access to electronic documents with a joint full-text server of TIB and FIZ Karlsruhe.
- Suggestions!**
If there is anything of interest to physicists that you are missing at the ViFaPhys, please let us know!
- The ViFaPhys Project**
About the ViFaPhys: description of the project, talks, internals, and [how to become an expert](#).

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<http://vifaphys.tib.uni-hannover.de>

ViFaPhys – Subject Guide



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ViFaPhys – Subject Guide

Collections of information resources,
no single documents:

- Link Compilations
- Technical Literature
- Software
- Organisations
- Research Projects
- Conferences

ViFaPhys – Subject Guide

- intellectual selection
 - regular checks
 - short descriptions
 - sorted by subject and by resource type
- ⇒ **clearly organised, up-to-date compilation of evaluated and commented resources.**

ViFaPhys – Subject Guide

Resources of **Scientific and Technical Data** concerning **Atomic and Molecular Physics?**

The Physics Virtual Library
ViFaPhys
Subject Guide

Subject Category Search

Classification:

This service is still under construction!

- [Acoustics](#) (9)
- [Atomic and Molecular Physics](#) (15)
- [Condensed Matter](#) (15)
- [Electromagnetism, Classical Field Theories](#) (9)
- [Elementary Particles and Fields, Quantum Physics](#) (7)
- [Experimental Physics, Measurement, Instruments, and Apparatus](#) (7)
- [Gases, Plasmas, Electric Discharges](#) (11)
- [Gravitation, Astrophysics and Geophysics](#) (14)
- [Interdisciplinary Physics and Related Areas of Science and Technology](#) (4)
- [Mathematical Methods in Physics](#) (4)
- [Mechanics](#) (14)
- [Nuclear Physics](#) (24)
- [Optics](#) (18)
- [Physics - General](#) (40)
- [Statistical Physics and Thermodynamics](#) (6)

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ViFaPhys – Subject Guide

Physics Virtual Subject Library - Microsoft Internet Explorer bereitgestellt von UB/TIB Hannover

Adresse http://vifaphys.lib.uni-hannover.de/fi.php?lang=en&skin=gui&node=classification&action=classification&classification=4&u_ch=0&u_ty=0&u_d=0&search= Datei

The Physics Virtual Library **ViFaPhys**
Subject Guide

Subject Category Search

Classification:

This service is still under construction!

- Acoustics (3)
- Atomic and Molecular Physics (17)**
- Continuum Mechanics (15)
- Electromagnetism, Classical Field Theories (6)
- Elementary Particles and Fields, Quantum Physics (21)
- Experimental Physics: Measurement, Instruments, and Apparatus (6)
- Gases, Plasmas, Electric Discharges (11)
- Gravitation, Astrophysics and Geophysics (15)
- Interdisciplinary Physics and Related Areas of Science and Technology (4)
- Mathematical Methods in Physics (4)
- Mechanics (14)
- Nuclear Physics (24)
- Optics (18)
- Physics, General (48)
- Statistical Physics and Thermodynamics (6)

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ViFaPhys – Subject Guide

Physics Virtual Subject Library - Microsoft Internet Explorer bereitgestellt von UB/TIB Hannover

Adresse http://vifaphys.lib.uni-hannover.de/1.php?lang=en&skin=gull/node-classificationfactor=sub_type&classification=1013&u_cf=type=200&u_ly= Date

The Physics Virtual Library **ViFaPhys**
Subject Guide

Subject Category Search

Classification: Atomic and Molecular Physics -> **Category:** Technical Literature -> **Sub-Category:**

This service is still under construction!

- [All Categories \(15\)](#)
- [Link Compilations and Subject Gateways \(2\)](#)
- [Technical Literature \(11\)](#)
 - [Bibliographic Information and Databases \(2\)](#)
 - [Full Text Resources \(1\)](#)
 - [Scientific and Technical Data \(1\)](#)
 - [Reference Materials \(4\)](#)
 - [Educational Materials \(2\)](#)
- [Software \(1\)](#)
- [Organisations \(0\)](#)
- [Research Projects \(0\)](#)
- [Conferences and Events \(1\)](#)
- [Mailing Lists and Newsgroups \(0\)](#)

ViFaPhys – Subject Guide

Library **ViFaPhys**
Subject Guide

Subject Category Search

Classification: Atomic and Molecular Physics -> **Category:** Technical Literature : Scientific and Technical Data-> **Results:**

This service is still under construction!

- **A Database for Atoms, Molecules, Gases and Plasmas**
[gaphyor \(jgpc.u-psud.fr/gaphyor/index.htm\)](#) [HTML]
GAPHYOR (GAz-PHYsics-ORsay) Data Center, located in Orsay at the Laboratoire de Physique des Gaz et des Plasmas LPGP, produces a database on properties of atoms, molecules and neutral or ionized gases, including chemical reactions. Five domains of physics, chemical physics and plasma physics are dealt with: properties of isolated atoms and molecules, collisions with photons, collisions with electrons, collisions and reactions between atoms and molecules, and macroscopic properties of gases. The database is based on a large coverage of the specialized literature in the fields of atomic and molecular physics, chemical physics and plasma physics. Data include bibliographical, factual and numerical information. [more info](#)
- **GENIE : A General Internet Search Engine for Atomic Data**
[gpe3 \(jgpc.u-psud.fr/GENIE\)](#) [HTML/Javascript]
This search engine retrieves numeric data from different databases in spectroscopy (oscillator strengths and transition probabilities) and in electronic collisions (ionization and excitation cross sections). [more info](#)
- **NIST Scientific and Technical Databases : Atomic and Molecular Physics**
[www.nist.gov/srd/atomic.htm](#) [HTML]
The NIST collection of atomic energy levels, transition probabilities, and collision data is widely used by groups for characterizing and modelling all types of gaseous systems, including plasmas, planetary atmospheres, and astrophysical media, and for health physics applications. Databases and publications make these data easy to find and easy to use. This page provides a topically ordered list of links to relevant NIST databases. [more info](#)
- **NIST Scientific and Technical Databases : Chemical and Crystal Structure**
[www.nist.gov/srd/chemandcrist.htm](#) [HTML]
The Chemical and Crystal Structure category of the NIST Scientific and Technical Databases site describes databases that are valuable tools for today's chemists, physicists, and materials scientists. These databases identify compounds or look for insights into material structures. A list of links to NIST databases dealing with aspects of chemical and crystal structure is provided by this page. [more info](#)

The Physics Virtual Library

- ▶ **Central aspect: integration of scientists,** supported by the
- ▶ **special interest group on 'Information' AKI of the German Physical Society DPG:**
 - engaged in **scientific information and communication in physics.**
 - **organises integration of experts** evaluating resources to be included in the Subject Guide.

Partners of ViFaPhys

▶ TIB

- German National Library of Science and Technology: Full text for physics.
 - experienced in developing Virtual Libraries
- ⇒ project coordinator

▶ Institute for Science Networking (ISN) Oldenburg:

- provides Internet-Services for physicists.
- ⇒ implementation of ViFaPhys-Server

Partners of ViFaPhys

- ▶ **Fachinformationszentrum Technik**
 - provider of scientific and technical databases⇒ integration of INSPEC
- ▶ **Fachinformationszentrum Karlsruhe**
 - information services for physicists

Integration of Scientists

- ▶ **as members of the project's scientific advisory board**
 - surveys and assists ViFaPhys.
- ⇒ expert advice: **consideration of specific needs of physicists**

Integration of Scientists

- ▶ **as experts selecting and evaluating sources to be included in the Subject Guide:**
 - judge relevance and scientific value of information sources.
- ⇒ ensure **quality of contents.**

Integration of Scientists

Evaluation of resources by

▶ experts from

- physics departments
- scientific research centres
- divisions of the German Physical Society DPG
- subject librarians.

▶ Experts register giving their research areas.

Integration of Scientists

▶ Formal descriptions already entered:

⇒ Evaluation of resources means

▶ just a small time investment!

▶ expert only

- judges **relevance of source** and decides if it should be **included**,

- designates exact **PACS category**, and

- determines **audience**.

Integration of Scientists

Evaluation of resources results

► in a

- **jointly maintained,**
- **quality-controlled**

collection of physics resources with
continuity ensured by TIB.

Integration of Scientists

Physics Virtual Subject Library - Microsoft Internet Explorer bereitgestellt von UB/TIB Hannover

Adresse http://vifaphys.lib.uni-hannover.de/fil.php?lang=en&skin=gull&node=classification&action=object_info&classification=6&u_cl=6&type=6&u_ty=6/ID=275&asach= Date: "

The Physics Virtual Library
ViFaPhys
Subject Guide

Subject Category Search

This service is still under construction!

- **The Superconductivity Information Center and High-Tc Update (Evaluated)**
www.itap.iastate.edu/htcu [HTML]
Description: The High-Tc Update Superconductivity site provides new preprint listings, information about new books and conferences, tech transfer and product development information, job openings and other valuable links relevant to researchers in the high-Tc superconductivity field. The High-Tc Update Database includes all preprints published in High-Tc Update, as well as numerous published journal articles and conference proceedings.
Author: Department of Physics and Astronomy, Iowa State University, Ames, Iowa
Publisher: Department of Physics and Astronomy, Iowa State University, Ames, Iowa
Classification: PACS2000 74. Superconductivity
Category: Link Computations and Subject Gateways
Bibliographic Information and Databases
Language: English
Rights: free
Audience: Specialists
Date: 2003.05.15

More Sources:

- **Best of PhysicsWeb : Condensed Matter**
physicsweb.org/bestof/cond-mat [HTML]

Example of evaluated resource

Integrating distributed expertise

Security standards:

- ▶ separation of functions

- usual web-server to present ViFaPhys to user: TCP/IP http://www...
- restricted work area on **Secure Socket Layer** server: SSL https:www...

Certificated by DFN Server CA

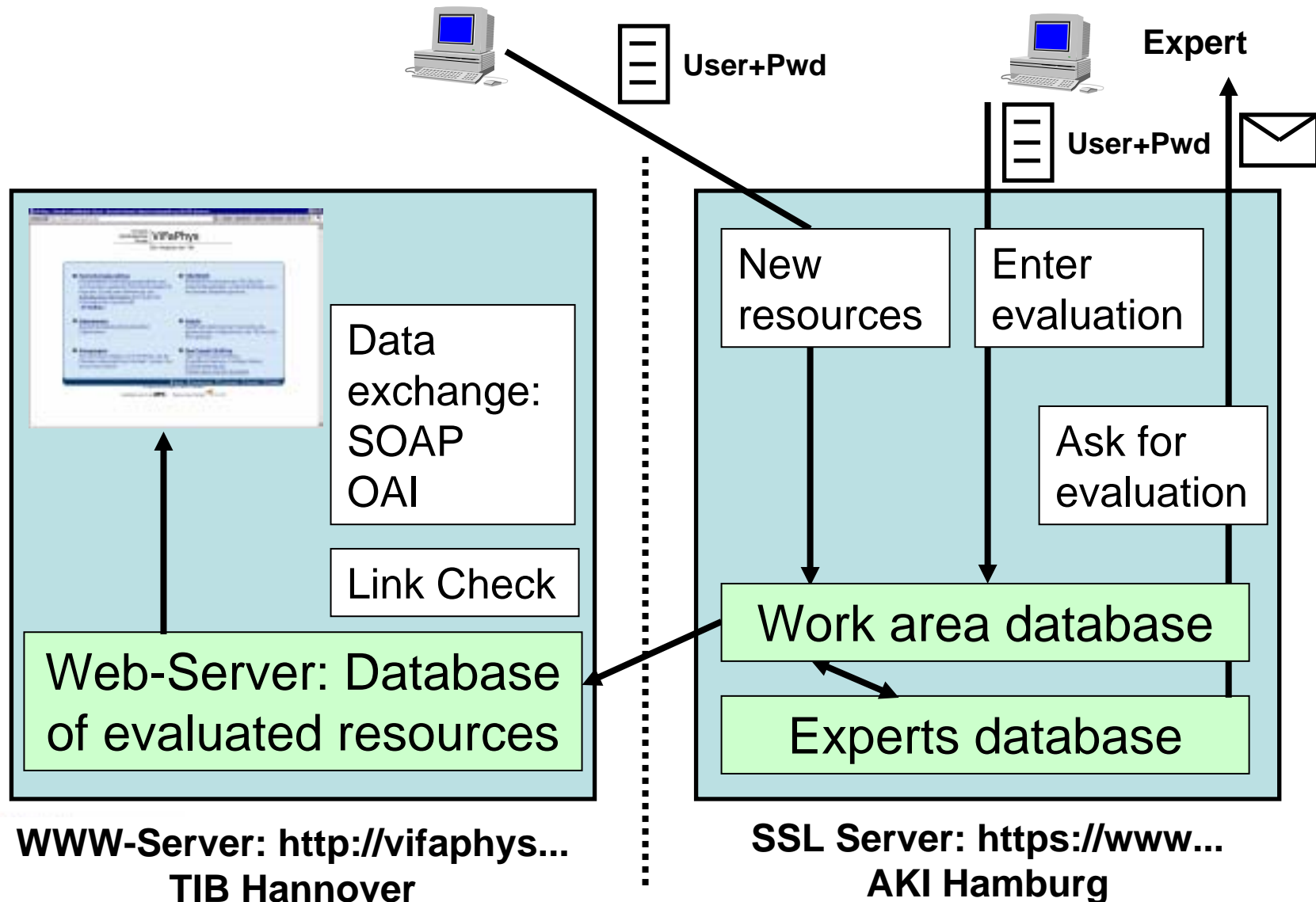
- ▶ access control within database software

Integrating distributed expertise

Software standards: Open Source

- ▶ Server: Apache + SSL
- ▶ Database: MySQL
- ▶ Script language: PHP 4

Integrating distributed expertise



Integrating distributed expertise

WWW-Server:

- ▶ implementation: ISN Oldenburg
- ▶ MySQL, PHP
- ▶ principles respected:
 - no frames
 - short page load times
 - accessibility to people with disabilities
 - robot friendly
 - bookmarkable
 - self-explanatory
 - modular design ...

Integrating distributed expertise

- ▶ Concept of ViFaPhys:
 - scientific advisory board
 - special interest group on 'Information' AKI of the German Physical Society DPG
- ▶ Contents of the Subject Guide:
 - experts from physics departments etc.
 - subject librarians.

Any Questions Are Welcome to

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The Physics Virtual Library

German National Library of Science and Technology

TIB

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