

JDS: Digital Library of JINR Information Resources

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Introduction

JINR Document Server, JDS, has been launched in 2009 in a framework of Open Access Initiative [1,2]. Open Access (OA) in science is a way to collect, preserve the intellectual output of scientific organization and disseminate it all over the world. JDS possesses a digital library functionality that is provided by the software CDS Invenio. It covers all the aspects of the modern digital library management from document ingestion through classification, indexing, curation and dissemination.

The aims of the JDS are to store and provide a more effective access to JINR information resources, make scientific results available to all scientific and educational community by the Internet and increase the level of the informational support of the JINR employees by granting an access to other scientific OA-archives and to estimate the efficiency of the JINR scientific activity [2].

JINR Document Server Content

JDS collects documents such as published articles, preprints, books, theses, conference proceedings, presentations and reports, dissertation abstracts, clippings from newspapers and magazines, photography, audio and video materials. Various methods of ingestion of documents into JDS and updating its content are applied: submission documents by authors, harvesting (automatic data acquisition) from arXiv.org, CERN Document Server (CDS) and other OAI-compliant archives; semi-automatic collection of documents from retrieval databases SPIRES, ADS, MathSciNet.

paper, create their own catalogues, send and receive messages, get alerts, etc. Furthermore, users can search and retrieve needed publication from any OAI-compliant servers of scientific publications [3,4].

The metadata output from a running CDS Invenio system to the end-user is covered by several modules: BibIndex to index the metadata, BibRank to eventually rank them, BibFormat to format them for the output, WebSearch to provide search interfaces and search engine, BibClassify to automatically classify documents according to keyword taxonomies and thesauri. Module BibClassify automatically extracts keywords from fulltext documents. The automatic assignment of keywords to textual documents has benefits in the digital library environment as it aids catalogization, classification and retrieval of documents. BibClassify performs an extraction of keywords based on the recurrence of specific terms, taken from a controlled vocabulary. A controlled vocabulary is a thesaurus of all the terms that are relevant in a specific context. BibClassify computes the keywords of a fulltext document based on the frequency of thesaurus terms in it. The result of the module running is the keyword cloud for some document (Fig.1.).

Search and Navigation

The objects stored in JDS are grouped into collections organized in the two trees: basic and subject collection trees (Fig.2.), that makes navigation more user-friendly [6].

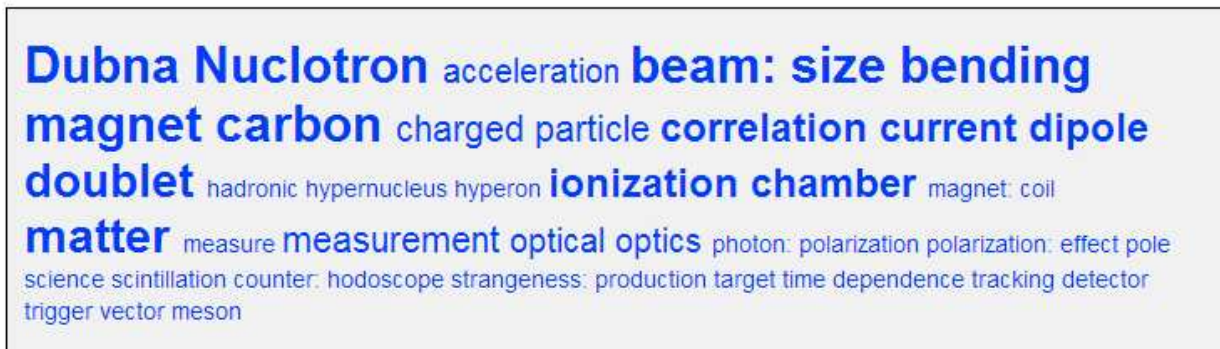


Figure 1: Keyword cloud for resource preprint JINR E1-2012-17

Digital library functionality of the JDS allows users to submit their manuscripts, notes and published articles, arrange discussions on interesting

Search engine provides typical web searching experience (Fig.3.) in simple and advanced modes:

- Many syntaxes are supported: Google like and

SPIRES

- Structured metadata: ex: author:ellis title:muon*, year:2001
- Search via MARC field: ex: 8564_u: ...
- Boolean queries: AND(+), OR(), NOT(-)
- Parenthesis: ex: (gravity OR supergravity) AND (ellis OR perelstein)
- Special characters and punctuation: ex: C++, O'Donnell
- International characters: ex: Lemaitre (finds Lematre)

of JDS provides a wide range of information services:

- Web-interface for submitting publications adapted for various types of documents (Article, Thesis, Conference Proceedings, Book, Preprint, Picture, Presentations and Talks, Notes, JINR Press Article, JINR Audio, JINR Video);

JINR Document Server

The screenshot shows the JINR Document Server interface. At the top, it displays 'Search 53,915 records for:' followed by a search input field and a dropdown menu set to 'any field'. There are 'Search' and 'Browse' buttons. Below this is a link for 'Search Tips :: Advanced Search'.

The interface is divided into two main sections for narrowing results:

- Narrow by collection:** This section lists various document types with checkboxes and counts:
 - Articles & Preprints (32,832): Articles (14,888), Preprints (15,471), Conference Papers (3,261)
 - Books and Reports (1,654): Reports (166), Books (1,488)
 - Conferences, Presentations and Talks (19,427): Conferences Announcements (4,099), Conferences Proceedings (15,326), Lectures (0), Notes of Schools and Seminars (0), Talks (2), Notes (0)
 - INDICOSEARCH (0): INDICOSEARCH.events (0), INDICOSEARCH.contribs (0), INDICOPUBLIC (0)
 - Handbooks & Manuals (0)
 - Theses (3)
 - Multimedia (3): Press (3), Audio (0), Videos (0), Pictures (0), Posters (0)
 - Bulletins (0): STL Bulletins (0)
- Focus on:** This section lists specific subject areas with counts:
 - JINR Articles & Preprints (23,673): JINR Published Articles (12,765), JINR Preprints (13,640)
 - JINR Conferences (177): JINR Annual Reports (137)
 - JINR (12): VELHEP (13), BLTP (19), ELNR (16), FLNP (28), DLNP (10), LIT (20), LRB (12), UC (7)
 - High Energy Experiments in JINR (180): FASA-3 (1), MARUSYA (3), EDEIZ (0), BECOUREL (0)
 - NUCLOTRON & NUCLOTRON-M (164): NIS (0), NICA/MPD (20)
 - Heavy Ion Physics Experiments in JINR (9): ACCULINNA (1), DRIES (1), DRIES-2 (0), CORSET, DEMON (0), MASHA (0), VASSILISSA (7)
 - Non-accelerator Neutrino Physics & Astrophysics (162): BAIKAL (106), EDELWEISS & EDELWEISS-II (10), GERDA (9), GEMMA & GEMMA-II (5), LESI (0), NEMO (32)
 - External Experiments (1,085): SPS (220), FAIR (60), RHIC (322), LHC (486)

Figure 2: JDS Collections in basic (on left) and subject (on right) trees

The screenshot shows the advanced search mode of the JDS interface. It features a 'Search:' section with three rows of search criteria:

- Row 1: 'Exact phrase:' dropdown, input field 'Goluvtn, I.A.', 'author' dropdown, and 'AND' dropdown.
- Row 2: 'Partial phrase:' dropdown, input field 'muon track trigger', 'any field' dropdown, and 'AND' dropdown.
- Row 3: 'All of the words:' dropdown, an empty input field, 'any field' dropdown, and 'Search' and 'Browse' buttons.

Below the search fields is a link for 'Search Tips :: Simple Search'.

Figure 3: Advanced search mode

User personalization

JDS interface can be personalized to suit different needs of different end-users. This functionality is covered by several modules: WebSession to identify users and their personal configurations, WebBasket to provide personal baskets or document carts, WebAlert to set up personal email notification alerts, WebComment to manipulate readers' comments and reviews, WebMessage to configure the messaging system [6]. Developed user interface

- Send messages to other users;
- Leave comments;
- User-defined bookshelves to inspect and manipulate the set of documents (Fig.4);
- User-defined automated email notification alerts;
- Sharing bookshelves within user groups.

Display baskets

Personal baskets Group baskets

LHC (1) test (1)

[Create new basket](#)

CMS
3 records - last update: 29 May 2012, 17:51
[Edit basket](#)

The CMS Silicon Strip Tracker: Concept, Production, and Commissioning // [Pooth, Oliver](#)
Fulltext: [PDF](#)
External link: [978-3-8348-9639-1](#)

[Detailed record - View comments](#)

Search for Extra Dimensions with Atlas and CMS Detectors at the LHC // [Shmatov, Sergei](#) [arXiv:0707.0470]
A brief review of the discovery potential of the ATLAS and CMS experiments to search for signals from extra dimensions in different luminosity scenarios is given..

[Detailed record - View comments](#)

[Search for extra dimensions with the CMS detector / *Chatterjee, Suman*](#)

Figure 4: Personal book shelf

JDS: future plans

In the near future – setting up the new version of CDS Invenio v.1.1.1., arrangement of video and audio materials collections, including lectures for young students, news about JINR, interviews. Further, creation of the JINR social science network and elaboration of a semantic search and navigation are planned. Next important task – the creation of the system for collecting and processing of on-line statistics to assess the impact of scientific activities [5, 7]. The purpose of this system is to provide the scientific community and decision-makers (heads of groups, sectors, departments, laboratories, etc.) the timely and actual information about the results of a professional team.

All those possibilities can provide a new way of the more effective usage of the JINR information resources.

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