



KLAIPĖDOS UNIVERSITETAS



Research Databases - an Assistant to Scientific and Pedagogical Work. Experience at Klaipėda University

Assoc. prof. dr. Audrius Senulis
Electrical Engineering Department
Klaipėda University

2014-11-06

Vilnius



KLAIPĖDOS UNIVERSITETAS



Author Antanas Stanevičius



Author Jūratis Liachovičius



KU archive

- Klaipėda University was established in 1991
- About 4800 students
- Scientific and academic staff – near 500
- 7 faculties
- 4 institutes and centers
- Vessels – “Brabander”, “Odisėja”, “Mintis”
- Library
- Botanical garden
- Publishing Office
- Career center



KLAIPĖDOS UNIVERSITETAS



Klaipėda University – Faculties, Centers, Institutes

Faculties:

- *Natural Sciences and Mathematics*
- *Humanities*
- ***Marine Engineering***
- *Arts*
- *Pedagogy*
- *Social Sciences*
- *Health Sciences*

Institutes, centers:

- *Continuing Studies*
- *Baltic Region History and Archaeology*
- *Marine Science and Technology Center*
- *Botanical garden*





Technology Departments in Klaipėda University

- *Marine Engineering Faculty:*
 - Civil Engineering Department; **Electrical Engineering Department**; Informatics Engineering Department; Mechanical Engineering Department; Ship Engineering Department; Shipping Department; Technological Processes Department; Maritime Institute
- *Natural Sciences and Mathematics Faculty* - Computer Science
- *Marine Science and Technology Center*
- *Research Center of Material and Constructions*



Scientific topics in Klaipėda University

- Systemic studies of Baltic region landscapes and development of new scientific technologies, securing sustainable development of the region and high quality of living environment
- Analysis and mathematic modeling of complex systems and their data
- Studies in sustainable development of marine cluster
- Development and exploration of mechatronic systems
- Complex biomedical and social studies from the viewpoint of sustainable social development and its modeling
- Modeling of adaptation of herbaceous plants to stress and practical employment of developmental regularities
- Interdisciplinary studies of marine and coastal zones for stable management of resources



Scientific topics in Klaipėda University

- Linguistic studies, studies of Lithuanian culture and history
- Studies in arts (music, theatre, dance, art) of 16th-19th centuries
- Improvement of education quality, aimed at human self-realization
- Andragogy in the context of lifelong learning: social – educational – management aspects in adult education
- Potential and problems of sustainable development in small countries
- Studies in culture, history, archaeology and cultural anthropology of Baltic region, Western Lithuania and Lithuania Minor



Available databases in Klaipėda University

Medicine and Health



Education



Business and other social science



Humanities and Art



Subscribed by LMBA

Subscribed by eMoDB.LT

Emerald | Insight

Passport

Subscribed by KU



KLAIPĖDOS UNIVERSITETAS

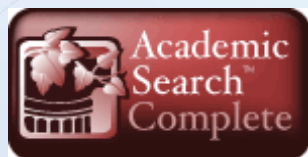


Multidisciplinary and Engineering databases in Klaipėda University

Multidisciplinary and
Engineering

E-Book databases

IEEE Xplore
DIGITAL LIBRARY

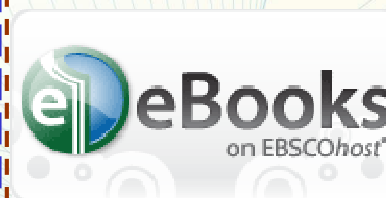


Oxford Reference

Subscribed by LMBA

Subscribed
by eMoDB.LT

Subscribed by LMBA



Subscribed
by KU





Citations and bibliography tool – Refworks

- The tool is subscribed by eMoDB.LT project
- A good tool for creating your own catalog of downloaded or used scientific papers and books
- Helps to share the information with others
- Makes easy to create citations using various citation styles
- Helps making citations from various information sources
- Very useful when creating customized bibliography
- Easy and simple to use





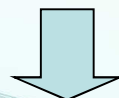
Distant Access to Databases

- Ezproxy server increased usage and accessibility

Nuotolinė prieiga

Licencijuojamomis ir testuojamomis duomenų bazėmis KU bendruomenės nariai gali naudotis ne tik iš KU tinklo kompiuterių, bet ir namuose. Nuotolinę prieigą suteikia EZproxy serveris:

1. prisijungimo adresas EZproxy (<http://ezproxy.biblioteka.ku.lt>);

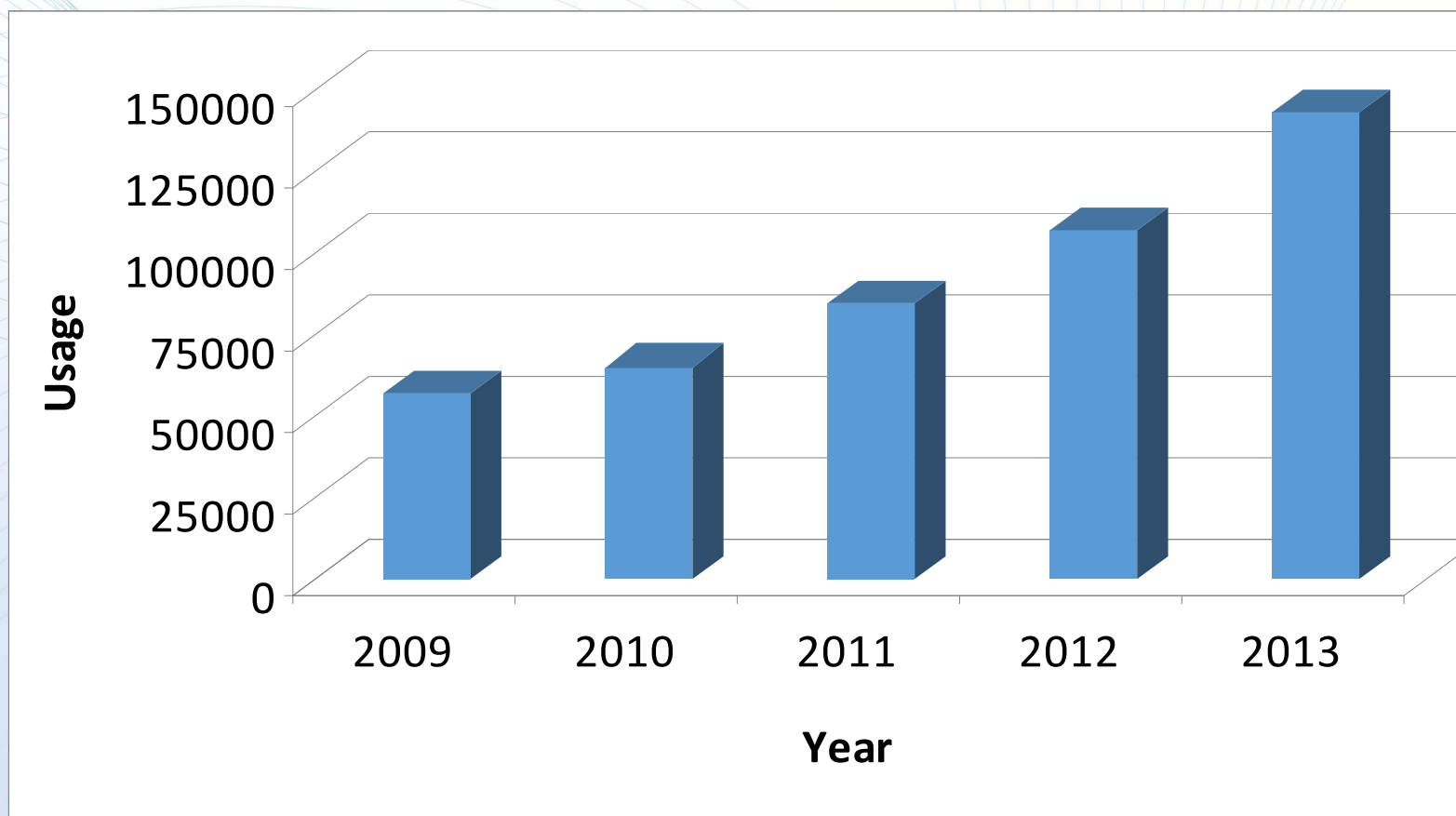


Institucija / Institution	Klaipėdos universitetas
Vartotojo ID/ User ID	
Slaptažodis / Password	
Jungtis	

- Usage increase of databases since start (2012) of Ezproxy server was 21% (KU Library information)

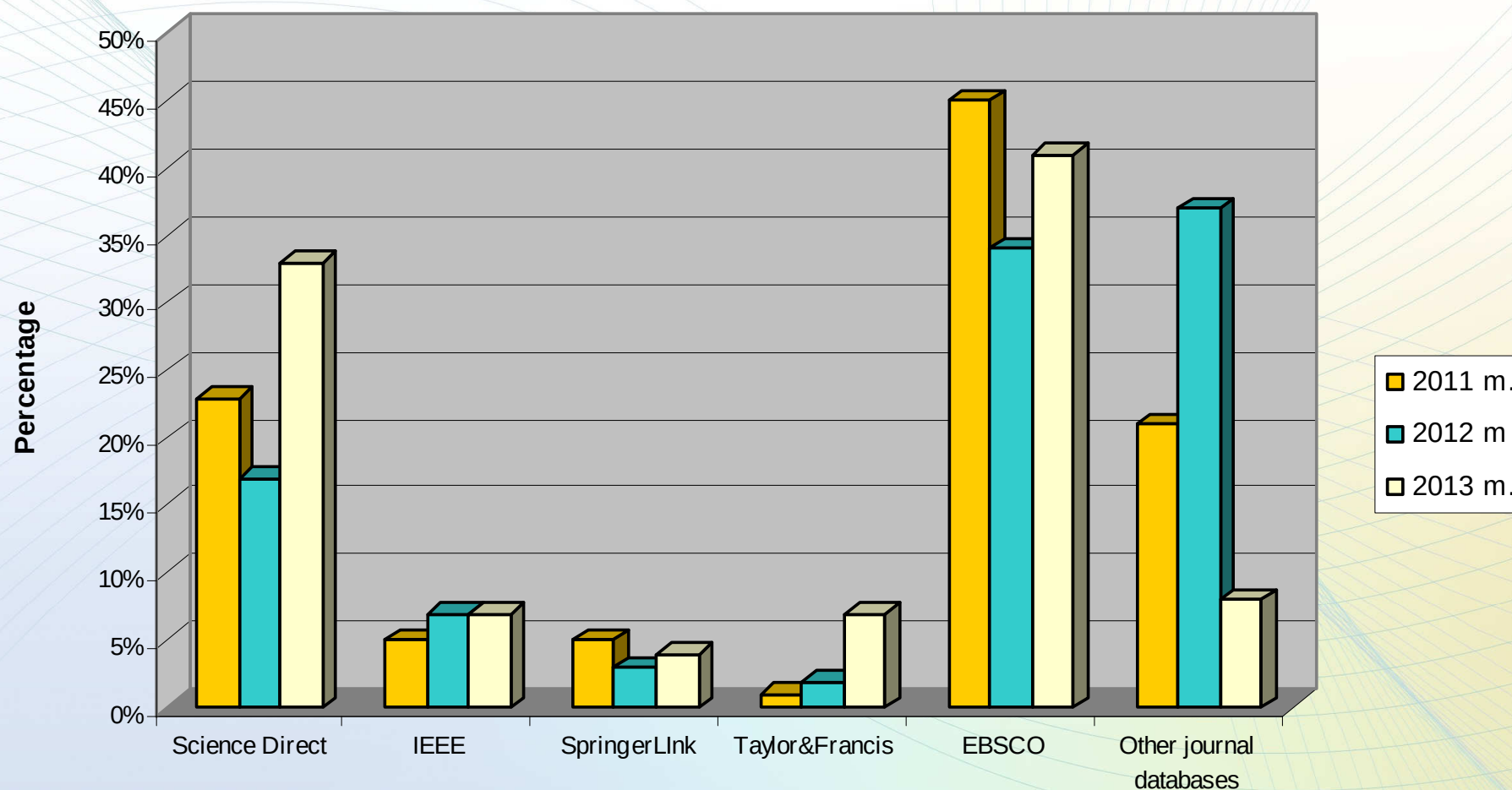


Usage of electronic databases in Klaipėda University



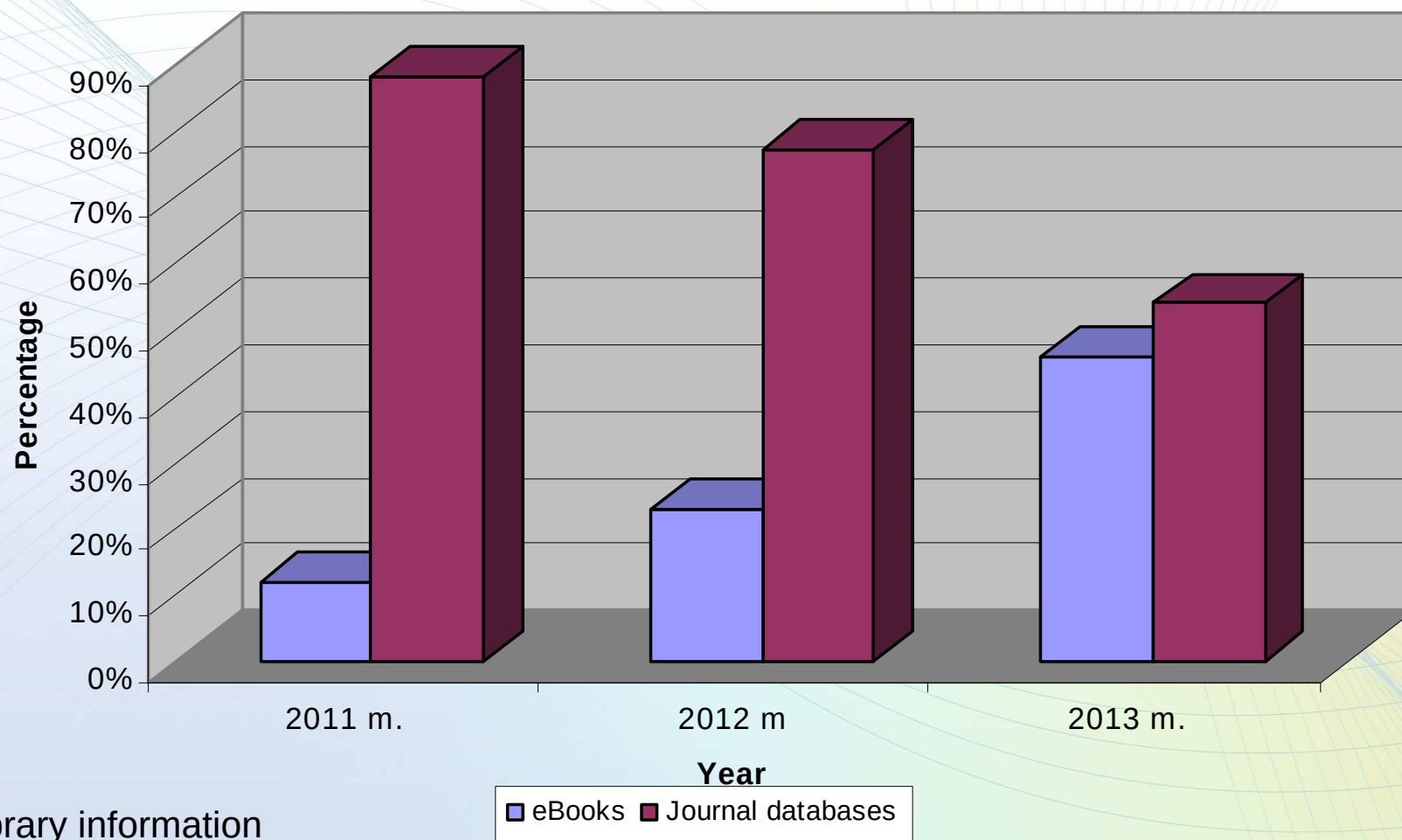


Usage distribution of electronic journal databases in Klaipėda University



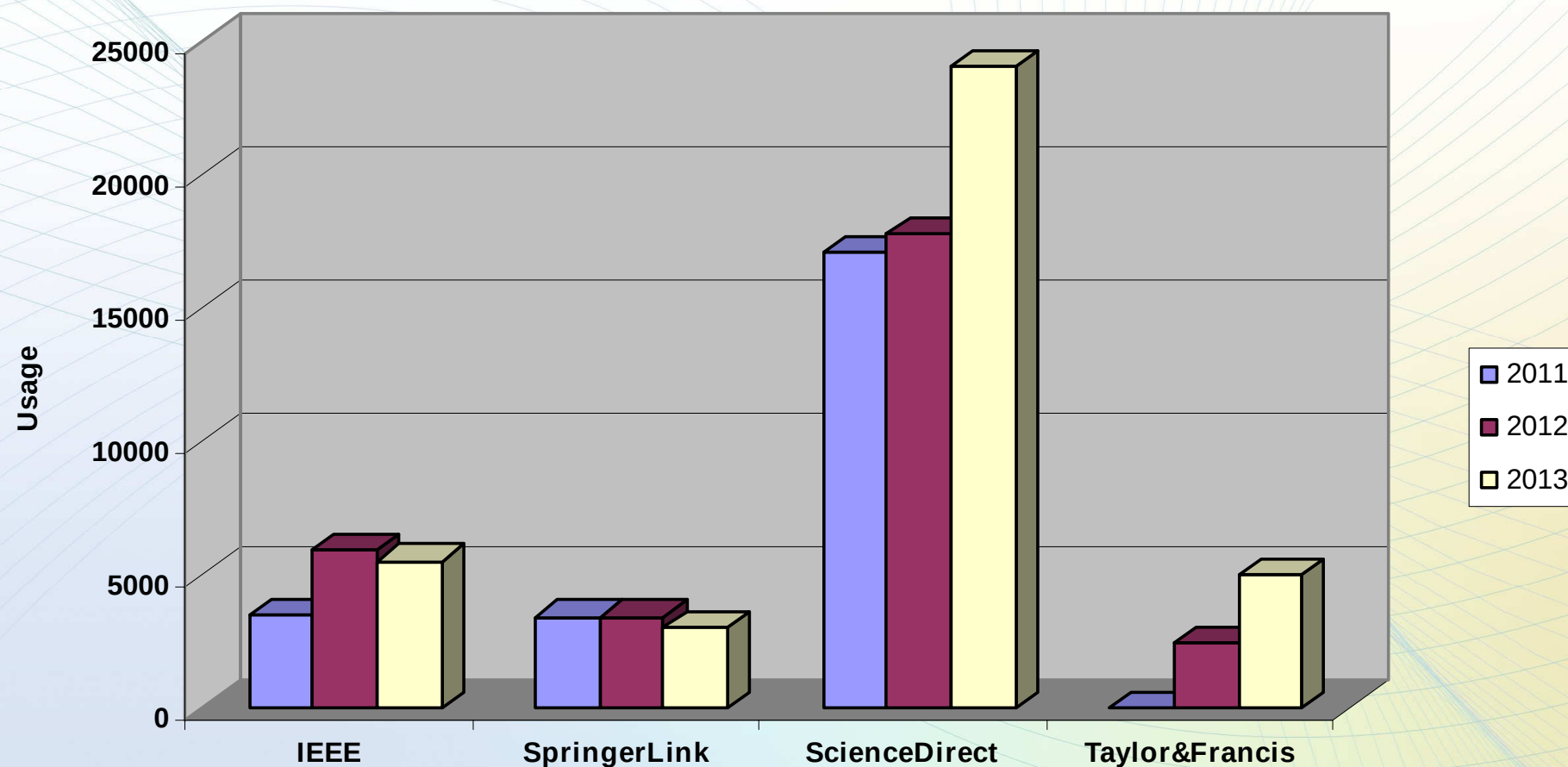


Usage distribution of electronic journal and eBook databases in Klaipėda University





Usage of specific journal databases in Klaipėda University





Needs for scientific and pedagogical work

- Access to scientific papers and books related to specific topics and subjects (in my case – electrical and electronics engineering; oscillating electrical machines and drives)
- Unlimited access to databases in time and place
- Citations and bibliography information
- Evaluation of own scientific achievements (citations, h-indexes,...)



Databases use in pedagogical activity (1)

- Bachelor studies:
 - eBook databases (Science Direct, Ebrary, KTU eBook, VGTU eBook) – the usage is more intensive due to structured information in the books
 - Journal databases – is more dedicated to course works (Electrical system course work, Course work of automatic control theory) and self dependant work due to specific issues addressed in the scientific papers



Databases use in pedagogical activity (2)

- Master studies:
 - eBook databases (Science Direct, Ebrary, KTU eBook, VGTU eBook) – the usage is intensive due to structured information in the books, but books context is more complex (Diagnostics, Computer-aided design, Modeling of the systems, Special electrical machines, Adaptive control systems)
 - Journal databases – is more intensively used than in bachelor studies due to scientific work, special homework topics; the self dependant work is dedicated to search scientific content, analyze it and draw conclusions to find the unsolved problems



Task for students

- Analyze the topic
- Create a relevant Key words
- Use the suggested keywords in databases
- Search not only in titles but also in full text
- Evaluate searched data, correct keywords
- Use search information in references and task completions, create citations by using Refworks
- Create own database of keywords for the future use in work and continuous education



Experience in preparation of doctoral thesis

- Intensive usage started with the admittance to doctoral studies (Electrical and Electronics Engineering) in Kaunas University of Technology at 2007.
- Main aim of usage databases in scientific work of doctoral studies – is to find the evaluate an unsolved problems depending on the already existing knowledge base.

Tasks:

- Find as much related scientific publications in doctoral theses scientific topic area (IEEE Explorer, Science Direct, ...)
- Evaluate the significance of found documents
- Use information in the first part of dissertation for review and conclusions
- Prepare citations and literature list (using Refworks, Zotero, or Endnote)
- Usage – approximately 50 percent of found information

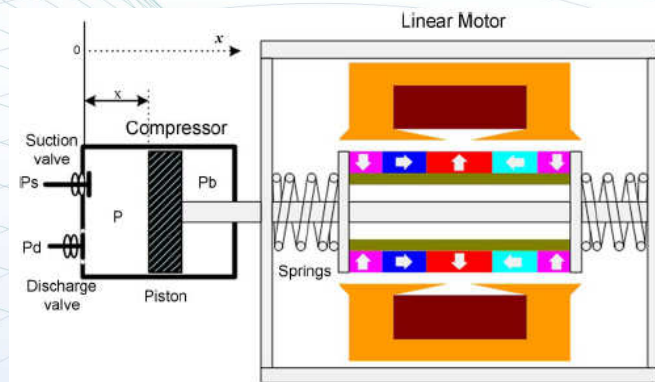


Search in topics of oscillating electrical machines

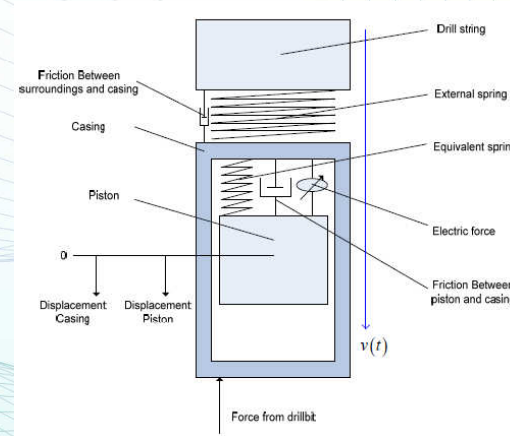
- Linear compressors, actuators
- Magnetic circuits of linear compressors
- Oscillating electrical machines
- Oscillating motors
- Sensorless control of linear compressors
- Diagnostics of electrical machines
- Design of linear compressor, oscillating motor
- Double-mass oscillating systems
- Current spectral analysis of linear compressors
-



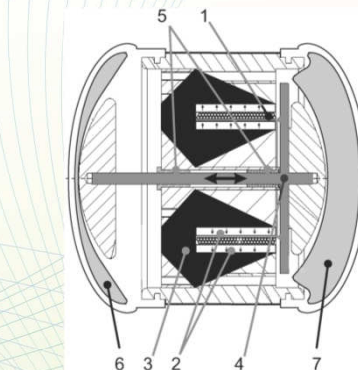
Doctoral theses – what I found in databases and what evolved



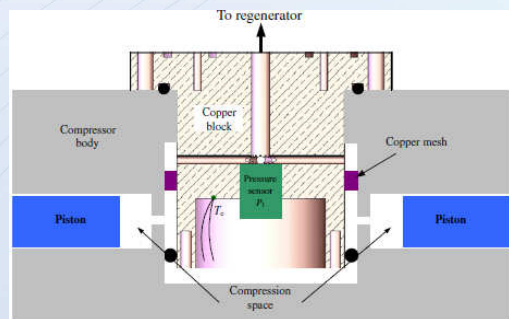
[1]*



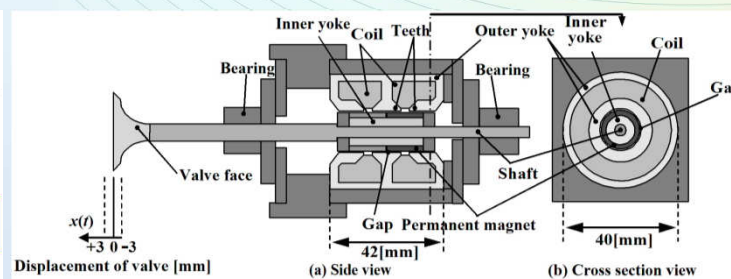
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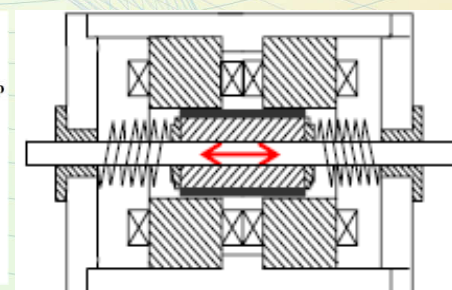
[3]*



[4]*



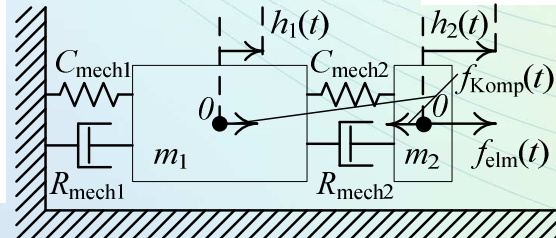
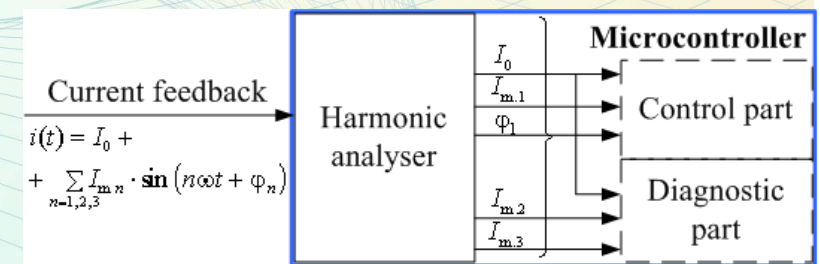
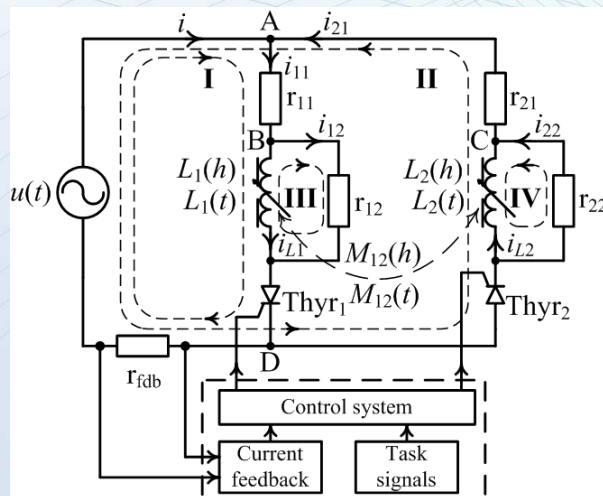
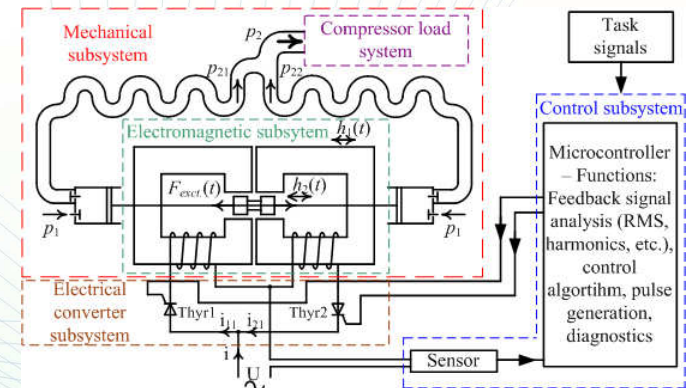
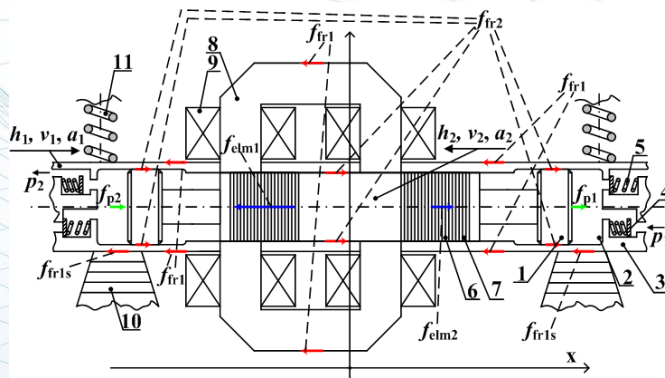
[5]*



[6]*



Doctoral theses – what I found in databases and what evolved [7*]



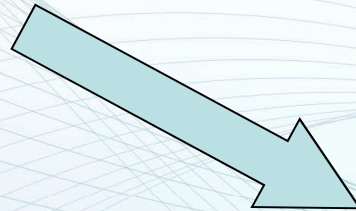
* - References in slide No. 27



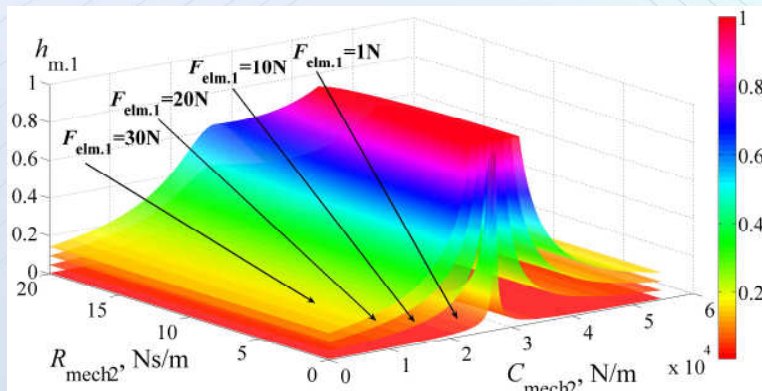
Equivalent mechanical resistance and oscillating amplitude of linear compressor

$$\frac{X_m}{I_m} = \frac{K_F}{\sqrt{(C_{\text{mech}} - m\omega^2)^2 + (R_{\text{mech}}\omega)^2}}$$

[8]*



$$|Z_{\text{mech}}(j\omega_n)| =$$



[7]*

$$\begin{aligned} & \frac{m_1^2 m_2^2 \omega_n^8}{m_1^2 \omega_n^6 + (R_{\text{mech1}}^2 - 2m_1 C_{\text{mech1}}) \omega_n^4 + C_{\text{mech1}}^2 \omega_n^2} + \\ & + \frac{(R_{\text{mech2}}^2 (m_1 + m_2)^2 - 2m_1 m_2 (C_{\text{mech2}} (m_1 + m_2) + C_{\text{mech1}} m_2)) \omega_n^6}{\frac{1}{2} \omega_n^6 + (R_{\text{mech1}}^2 - 2m_1 C_{\text{mech1}}) \omega_n^4 + C_{\text{mech1}}^2 \omega_n^2} + \\ & + \frac{R_{\text{mech1}} m_2^2 (R_{\text{mech1}} + 2R_{\text{mech2}}) \omega_n^6 + m_2^2 (C_{\text{mech1}} + C_{\text{mech2}})^2 \omega_n^4}{\frac{1}{2} \omega_n^6 + (R_{\text{mech1}}^2 - 2m_1 C_{\text{mech1}}) \omega_n^4 + C_{\text{mech1}}^2 \omega_n^2} + \\ & + \frac{(R_{\text{mech1}}^2 (R_{\text{mech2}}^2 - 2m_2 C_{\text{mech2}}) - 2R_{\text{mech2}}^2 C_{\text{mech1}} (m_1 + m_2)) \omega_n^4}{\frac{1}{2} \omega_n^6 + (R_{\text{mech1}}^2 - 2m_1 C_{\text{mech1}}) \omega_n^4 + C_{\text{mech1}}^2 \omega_n^2} + \\ & + \frac{m_1 C_{\text{mech2}} (2m_2 (2C_{\text{mech1}} + C_{\text{mech2}}) + m_1 C_{\text{mech2}}) \omega_n^4 + R_{\text{mech1}}^2 C_{\text{mech2}}^2 \omega_n^2}{\frac{1}{2} \omega_n^6 + (R_{\text{mech1}}^2 - 2m_1 C_{\text{mech1}}) \omega_n^4 + C_{\text{mech1}}^2 \omega_n^2} + \\ & + \frac{(R_{\text{mech2}}^2 C_{\text{mech1}}^2 - 2C_{\text{mech1}} C_{\text{mech2}} (C_{\text{mech2}} (m_1 + m_2) + m_2 C_{\text{mech1}})) \omega_n^2}{\frac{1}{2} \omega_n^6 + (R_{\text{mech1}}^2 - 2m_1 C_{\text{mech1}}) \omega_n^4 + C_{\text{mech1}}^2 \omega_n^2} + \\ & + \frac{C_{\text{mech1}}^2 C_{\text{mech2}}^2}{m_1^2 \omega_n^6 + (R_{\text{mech1}}^2 - 2m_1 C_{\text{mech1}}) \omega_n^4 + C_{\text{mech1}}^2 \omega_n^2} \end{aligned}$$

[7]*

* - References in slide No. 27



Challenges using Databases for Scientists Academic Staff and Students

- Topic relevant key word selection
- Huge amount of information – when it is enough to analyze information and start solving the problem
- Search in multiple bases in the same topic
- In some cases – language obstacle
- For students – evaluation of found information – they need an assistance
- Downloaded files have unspecified names – better that files would have names of the articles



Future expectations and perspective

- Looking forward that 3rd stage of eMoDB.LT project will help continue subscription of databases used by Klaipėda University and there also will be a possibility to increase the variety of databases (including databases not subscribed in 2nd stage)
- Klaipėda University staff and students are increasingly using and will use databases despite the decrease of student count
- Stability in providing the access to variety databases
- Access to evaluation platforms of scientist (Web of Science, Scopus or other)
- International plagiarism detection system – would be a perfect tool for checking various works in scientific work



Conclusions

- eMoDB.LT project is very useful – it increases accessibility to knowledge – and that is the most important for scientists, academic staff and students
- Klaipėda University is a multidiscipline and universal university which needs e-resources of knowledge from various fields of science. Diversity of databases would significantly help scientists, academic staff and students to reach their scientific, pedagogical and learning needs
- The variation of usage of databases depends on staff, scientific field, traditions and acceptance of new information sources
- The usage of information from databases helps preparing various course works, final theses and doctoral dissertations presenting the wider perspective of existing knowledge for problem clarification



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THANK YOU FOR ATTENTION