

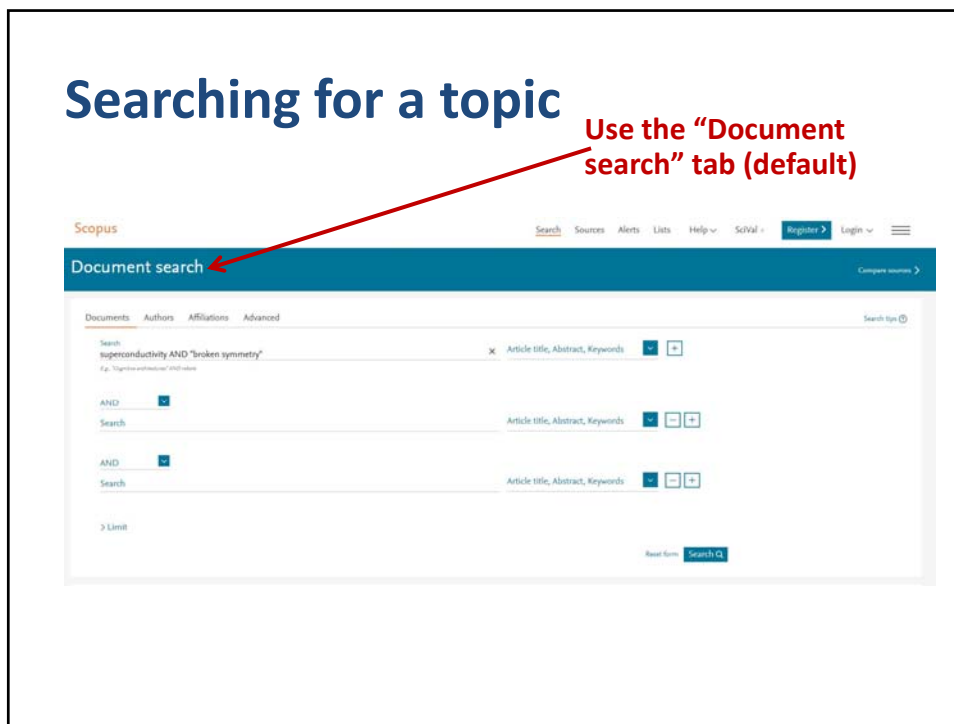
What is Scopus? www.scopus.com

Largest abstract & citation database of curated international peer-reviewed literature

- 22 000 peer-reviewed journals
- 360 trade publications
- 120 000 books (with 10 000 added/year)
- >70 million records, back to 1788
- 6.4 million conf papers from proceedings & jrnl
- 350 million scientific web pages indexed by Scirus
- 25.2 million patent records
- “Articles-in-Press” from >3850 journals

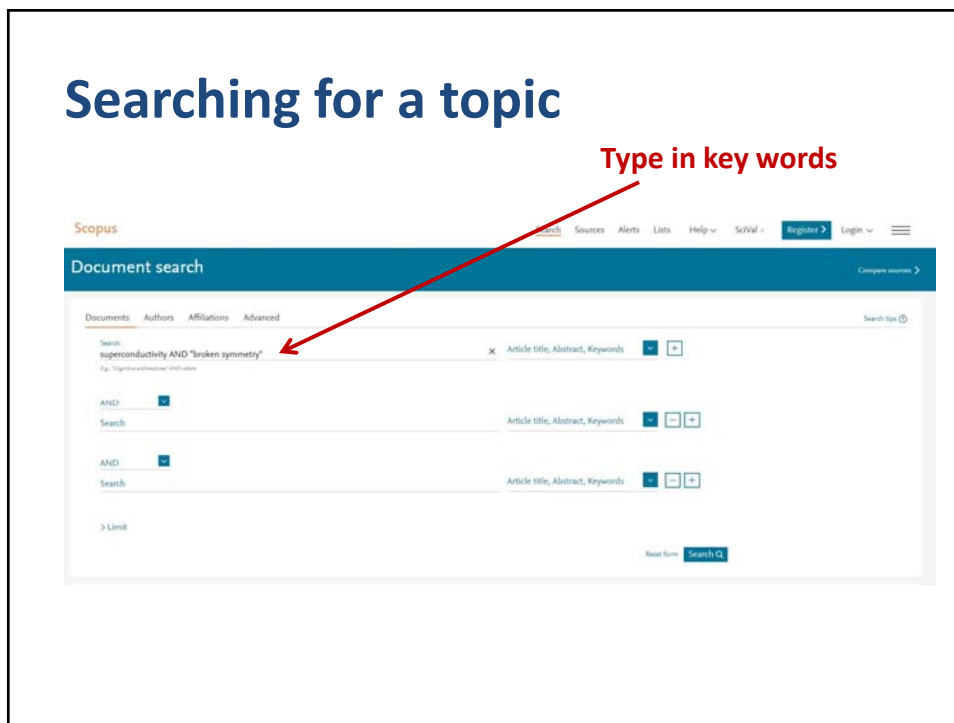
Searching for a topic

Use the "Document search" tab (default)



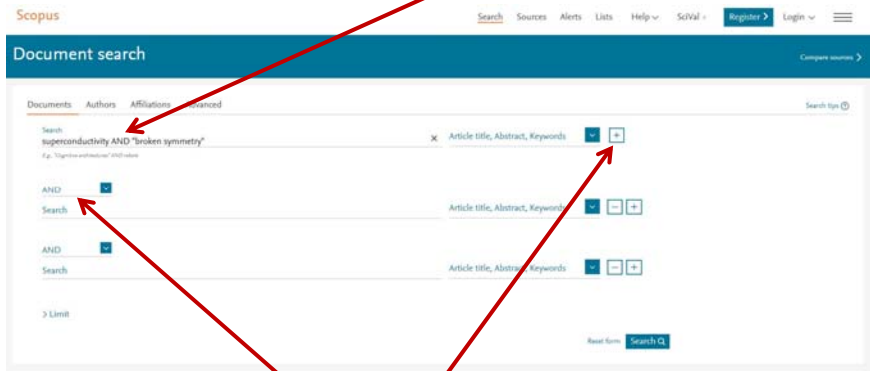
Searching for a topic

Type in key words



Searching for a topic

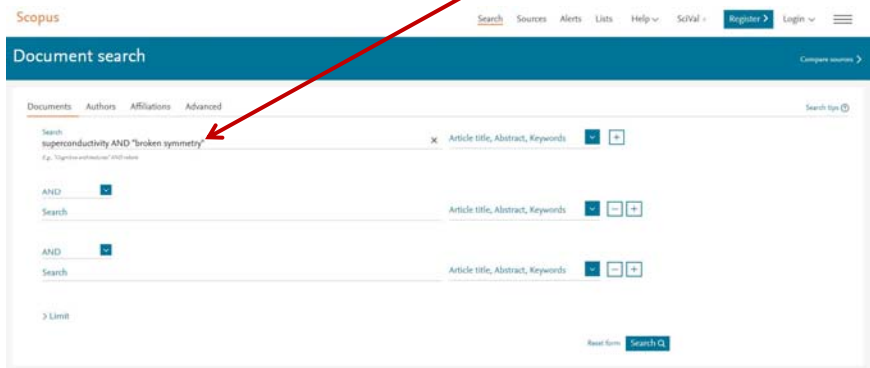
Use Boolean operators to add or narrow terms, or add more search fields



Or use the "add field" button

Searching for a topic

Use quotation marks to search for exact phrases



Searching for a topic

Use the drop-down menus
to specify where to search

The screenshot shows the Scopus Document search interface. At the top, there are navigation links for Search, Sources, Alerts, Lists, Help, SciVal, Register, and Login. Below this is a blue header for 'Document search'. The main search area has tabs for Documents, Authors, Affiliations, and Advanced. The search query is 'superconductivity AND "broken symmetry"'. There are three search criteria listed, each with a drop-down menu set to 'Article title, Abstract, Keywords'. A red arrow points to the first drop-down menu.

Searching for a topic

The screenshot shows the Scopus Document search interface, similar to the previous one. The search query is 'superconductivity AND "broken symmetry"'. Below the search criteria, there is a 'Limit' link circled in red. A red arrow points to this link with the text 'Use the "Limit" link to specify a date range'. Below the Limit link, there are options for 'Date range (inclusive)', 'Document type', and 'Access type'.

Searching for a topic

The screenshot shows the Scopus search interface with the search term "superconductivity AND 'broken symmetry'". Below the search bar, there are three "AND" search boxes. At the bottom, there are filters for "Date range (inclusive)", "Document type", and "Access type". A red circle highlights the "Limit" link, with an arrow pointing to it and the text "Use the 'Limit' link to specify a date range". Another red arrow points from the "Limit" link to the "Document type" and "Access type" filters, with the text "or document or access type (open access)".

Results can be refined by many search parameters

The screenshot shows the Scopus search results page for the same search term, displaying 164 document results. On the left side, there is a "Refine results" panel with filters for "Access type", "Year", and "Author name". Red arrows point from the "Limit or Exclude" text to the "Limit" and "Exclude" buttons in the "Refine results" panel. Another red arrow points from "by access type" to the "Access type" filter. A third red arrow points from "by year" to the "Year" filter. A fourth red arrow points from "by author(s)" to the "Author name" filter. The main results area shows a table of search results with columns for Document title, Authors, Year, Source, and Cited by.

Document title	Authors	Year	Source	Cited by
1 Evidence of cosmic strings by the observation of the alignment of quasar polarization axes on Mpc scale	Slagter, R.J.	2018	International Journal of Modern Physics D 27(9),1850094	0
2 Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension	Roy, B., Foster, M.S.	2018	Physical Review X 8(3),031049	2
3 Two-stage multipolar ordering in PV2A2O9 Kondo materials	Freyer, F., Abig, J., Lee, S.-C., Tobet, S., Kim, Y.B.	2018	Physical Review B 97(11),115111	0
4 Magnetic and Nematic Orders of the Two-Dimensional Electron Gas at Oxide (111)	Boudjele, H., Wachter, G., Paramakanti, A.	2018	Physical Review Letters 120(5),056402	2

Results can be automatically analyzed by clicking the link

The screenshot shows the Scopus search results page for the query "TITLE-ABS-KEY (superconductivity AND broken symmetry)". The page displays 164 document results. A red arrow points to a button labeled "Analyze search results" which is circled in red. Below the button is a table of search results with columns for Document title, Authors, Year, Source, and Cited by.

Document title	Authors	Year	Source	Cited by
1 Evidence of cosmic strings by the observation of the alignment of quasar polarization axes on Mpc scale	Singar, R.J.	2018	International Journal of Modern Physics D 27(9),1850094	0
2 Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension	Roy, S., Foster, M.S.	2018	Physical Review X 8(3),031049	2
3 Two-stage multipole ordering in PV2O29 Kondo materials	Freyr, F., Atig, J., Lee, S., ..., Trévis, S., Kim, Y.B.	2018	Physical Review B 97(11),115111	0
4 Magnetic and Nematic Orders of the Two-Dimensional Electron Gas at Oxide(111) Surface and Interface	Boudjele, H., Wachni, G., Paramakati, A.	2018	Physical Review Letters 120(6),066802	2

And Scopus will analyze the results in many different ways

The screenshot shows the same search results page but with the "Analyze search results" button clicked. The page displays various analysis charts and a list of affiliations. The charts are labeled with red text: "by year", "by source", "by author", "by country", "by doc type", and "by subject".

by affiliation

Affiliation	Documents
Boulleaux National Laboratory	10
University of Utah	8
Los Alamos National Laboratory	7
Stanford University	6
National Institute of Industrial Science and Technology	5
University of Alberta (Edmonton & Fort St. John)	4
University of Toronto	3
Osaka Institute of Science and Technology	2
Joint Institute for Nuclear Research, Dubna	2

Click on the title in the "results" list

The screenshot shows the Scopus search results page for the query "TITLE-ABS-KEY (superconductivity AND broken symmetry)". The search results are displayed in a table with columns for document title, authors, year, source, and cited by. The first result is "Evidence of cosmic strings by the observation of the alignment of quasar polarization axes on Mpc scale" by Singer, R.J., published in 2018 in the International Journal of Modern Physics D. The second result is "Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension" by Roy, B., Foster, M.S., published in 2018 in Physical Review X. A red circle highlights the first result's title.

Abstract, metrics, citing docs, related docs, keywords, all references

The screenshot shows the document details page for the article "Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension" by Roy, B., Foster, M.S. The page includes the abstract, metrics (249 citations in Scopus, 4.92 field-weighted citation impact), a list of citing documents, related documents, and indexed keywords. A red arrow points to the "link for citing docs" section. At the bottom, a red arrow points down with the text "scroll down for all 107 refs".

You can also access the full text for most papers

Scopus Search Sources Alerts Lists Help v ScVal v Register > Login v

Document details

Back to results | Previous 2 of 184 Next >

Export Download Print E-mail Save to PDF Add to List More... >

View at Publisher ← **“View at Publisher” link**

Physical Review X (Open Access)
Volume 8, Issue 1, 26 March 2018, Article number 0123049

Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension

DOI: 10.1103/PhysRevX.8.0123049

Roy, B.T., Foster, M.S., et al.

Department of Physics and Astronomy, Rice University, Houston, TX 77005, United States
Texas Center for Quantum Materials, Rice University, Houston, TX 77005, United States

Abstract

We compute the effects of generic short-range interactions on gapless electrons residing at the quantum critical point separating a two-dimensional Dirac semimetal and a symmetry-preserving band insulator. The electronic dispersion at this critical point is anisotropic $(E_{\pm} = \pm \sqrt{v^2 k_x^2 + W^2 k_y^2})$ with $n=2$, which results in unconventional scaling of thermodynamic and transport quantities. Because of the vanishing density of states $\rho(E) \sim |E|^{n-1}$, this anisotropic semimetal (ASM) is stable against weak short-range interactions. However, for stronger interactions, the direct Dirac-semimetal to band-insulator transition can either (i) become a fluctuation-driven first-order transition (although unlikely in a particular microscopic model considered here, the anisotropic honeycomb lattice extended Hubbard model) or (ii) get avoided by an intervening broken-symmetry phase. We perform a controlled renormalization group analysis with the small parameter $\epsilon = 1/n$, augmented with a $1/n$ expansion (parametrically suppressing quantum fluctuations in the higher dimension) by perturbing away from the one-dimensional limit, realized by setting $\epsilon = 0$ and $n \rightarrow \infty$. We identify charge density wave (CDW), antiferromagnet (AFM), and dimerized states as the three dominant candidates for broken symmetry. The onset of any such order at strong coupling ($\epsilon \rightarrow 0$) takes place through a continuous quantum phase transition across an interacting multicritical point, where the ordered phase, band insulator, Dirac, and anisotropic semimetal meet. We also present the phase diagram of an extended Hubbard model for the ASM, obtained via the controlled deformation of its counterpart in one dimension. The latter displays spin-charge separation and coexists in CDW, spin-density wave, and Luther-Emery liquid phases at arbitrarily weak coupling. The spin density wave and Luther-Emery liquid phases deform into pseudospin SU(2)-symmetric quantum critical points separating the ASM from the AFM and superconducting orders, respectively. Our phase diagram shows an intriguing interplay among CDW, AFM, and n -wave paired states that can be germane for a uniaxially strained optical honeycomb lattice for ultracold fermion atoms, or the organic compound θ -RbClO₄. © 2018 authors. Published by the American Physical Society.

View references (107)

Reprints Database Information

View Comments

Indexed keywords

Engineering controlled terms:

Antiferromagnet Charge density wave Coulomb Density of states Heterostructure Hubbard model Ising model Optical lattice Phase diagram Quantum electronics Separation Spin wave Spin density wave Stabilized mechanism

Metrics

269 Citations in Scopus
4.92 h^m Field-Weighted Citation Impact

PlumX Metrics

Cited by 2 documents

Phase transition with trivial quantum entanglement in an anisotropic Weyl semimetal
Li, X., Wang, J.-R., Liu, G.-Z., (2018) Physical Review B

Inherent quantum multicriticality of two-dimensional Dirac fermions
Roy, B., Goswami, P., (2018) Physical Review B

View all 2 citing documents

Inform me when this document is cited in Scopus

Get citation alert! Get citation text!

Related documents

Inherent quantum multicriticality of two-dimensional Dirac fermions
Roy, B., Goswami, P., (2018) Physical Review B

Emergent Non-Fermi-Liquid at the Quantum Critical Point of a Topological Phase Transition in Two Dimensions

Voilà!

SAIS physics Journals Help/Feedback Journal, vol, page, DOI, etc. p

PHYSICAL REVIEW X

Highlights Recent Subjects Accepted Collections Authors Referees Search Press About Staff

Open Access

Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension

Bitan Roy and Matthew S. Foster
Phys. Rev. X **8**, 0123049 – Published 26 March 2018

Article References Citing Articles (2) PDF HTML Export Citation

ABSTRACT

We compute the effects of generic short-range interactions on gapless electrons residing at the quantum critical point separating a two-dimensional Dirac semimetal and a symmetry-preserving band insulator. The electronic dispersion at this critical point is anisotropic $(E_{\pm} = \pm \sqrt{v^2 k_x^2 + W^2 k_y^2})$ with $n = 2$, which results in unconventional scaling of thermodynamic and transport quantities. Because of the vanishing density of states $\rho(E) \sim |E|^{n-1}$, this anisotropic semimetal (ASM) is stable against weak short-range interactions. However, for stronger interactions, the direct Dirac-semimetal to band-insulator transition can either (i) become a fluctuation-driven first-order transition (although unlikely in a particular microscopic model considered here, the anisotropic honeycomb lattice extended Hubbard model) or (ii) get avoided by an intervening broken-symmetry phase. We perform a controlled renormalization group analysis with the small parameter $\epsilon = 1/n$, augmented with a $1/n$ expansion (parametrically suppressing quantum fluctuations in the higher dimension) by perturbing away from the one-dimensional limit, realized by setting $\epsilon = 0$ and $n \rightarrow \infty$. We identify charge density wave (CDW),

Issue
Vol. 8, Iss. 1 — January - March 2018

Subject Areas
Condensed Matter Physics
Strongly Correlated Materials

Check for updates

You can also search by author

Use the "Author search"

The screenshot shows the Scopus Author search page. At the top, there is a navigation bar with 'Search', 'Sources', 'Alerts', 'Lists', 'Help', 'SciVal', 'Register', and 'Login'. Below this is a blue header for 'Author search' with a 'Compare sources' link. A blue information box explains the Scopus Author Identifier algorithm. Below the information box are four tabs: 'Documents', 'Authors', 'Affiliations', and 'Advanced'. The 'Authors' tab is circled in red, and a red arrow points from the text 'Use the "Author search"' to it. Below the tabs are search fields for 'Author last name' (with example 'e.g. Smith'), 'Author first name' (with example 'e.g. J.L.'), 'Affiliation' (with example 'e.g. University of Toronto'), and 'ORCID' (with example 'e.g. 1111-2222-3333-4444'). There are 'Search Q.' buttons for each field and a 'Show exact matches only' checkbox.

You can also search by author

Type in author surname and first name or initials

This screenshot is identical to the one above, but with the search fields populated. The 'Author last name' field contains 'Fradkin' and the 'Author first name' field contains 'Eduardo'. Red arrows point from the text 'Type in author surname and first name or initials' to these two fields. The 'Authors' tab remains selected.

You can also search by author

Turn on "exact matches"
to narrow search

The screenshot shows the Scopus Author search page. At the top, there is a navigation bar with 'Search', 'Sources', 'Alerts', 'Lists', 'Help', 'SciVal', 'Register', and 'Login'. Below this is a blue header with 'Author search' and a 'Compare sources' link. A help box explains the Scopus Author Identifier algorithm. The main search area has tabs for 'Documents', 'Authors', 'Affiliations', and 'Advanced'. Under 'Authors', there are two input fields: 'Author last name' with 'Fradkin' and 'Author first name' with 'Eduardo'. Below these is an 'Affiliation' field with 'University of Toronto' and a checkbox for 'Show exact matches only' which is currently unchecked. A 'Search Q' button is to the right. At the bottom, there is an 'ORCID' field with another 'Search Q' button. A red arrow points from the text 'Turn on "exact matches" to narrow search' to the 'Show exact matches only' checkbox.

You can also search by author

Leave "Affiliation" blank
for more results

This screenshot is identical to the one above, showing the Scopus Author search page. However, a red arrow points from the text 'Leave "Affiliation" blank for more results' to the 'Affiliation' input field, which is currently empty. The 'Show exact matches only' checkbox remains unchecked.

Select the correct author...

Scopus Search Sources Alerts Lists Help SciVal Register Login

2 author results About Scopus Author Identifier

Author last name "Fradkin", Author first name "Eduardo"

Show exact matches only

Refine results

Source title

- Journal Of Statistical Mechanics: Theory And Experiment (2) >
- Advanced Materials (1) >
- Annalen Der Physik (1) >
- Annals Of Physics (1) >
- Annual Review Of Condensed Matter Physics (1) >

View more

Sort on: Document count (high-low)

All **Show documents** View citation overview Request to merge authors

Author	Documents	Subject area	Affiliation	City	Country/Territory
1 Fradkin, Eduardo H. Fradkin, E. Fradkin, E. H. Fradkin, Eduardo	225	Physics and Astronomy ; Materials Science ; Mathematics ; ...	University of Illinois at Urbana-Champaign	Urbana	United States
2 Fradkin, Eduardo	1	Mathematics ; Physics and Astronomy ; Precision Sciences ; ...	University of Illinois at Urbana-Champaign	Urbana	United States

and click on "Show documents"

And we get Eduardo's 226 papers

Scopus Search Sources Alerts Lists Help SciVal Register Login

226 document results View secondary documents

ALI-ID ("Fradkin, Eduardo H." 35498145900) OR ALI-ID ("Fradkin, Eduardo" 57203044407)

Edit Save Set alert Set feed

Search within results...

Analyze search results Show all abstracts Sort on: Date (newest)

Refine results

Access type

- Open Access (2) >
- Other (224) >

Year

- 2018 (6) >
- 2017 (14) >
- 2016 (9) >

Document title Authors Year Source Cited by

1 Scrambling in the quantum Lifshitz model	Pamadela, E., Fradkin, E.	2018	Journal of Statistical Mechanics: Theory and Experiment 2018(10):063102	0
2 Pair density waves in superconducting vortex halos	Wang, Y., Edkins, S.D., Hamidian, M.H., Fradkin, E., Kivelson, S.A.	2018	Physical Review B 97(17):174510	5

which can also be sorted in a variety of ways

Scopus can dump citation data to your reference manager by magic

Analyze search results Show all abstracts Sort on: Date (newest)

All **Export** Download View citation overview View cited by Add to List ...

	Document title	Authors	Year	Source
<input checked="" type="checkbox"/>	1 Scrambling in the quantum Lifshitz model	Plamadeala, E., Fradkin, E.	2018	Journal of Statistical Mechanics: Theory and Experiment 2018(6),063102
	View abstract <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> View at Publisher Related documents			
<input checked="" type="checkbox"/>	2 Pair density waves in superconducting vortex halos	Wang, Y., Edkins, S.D., Hamidian, M.H., (...), Fradkin, E., Kivelson, S.A.	2018	Physical Review B 97(17),174510
	View abstract <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> View at Publisher Related documents			
<input checked="" type="checkbox"/>	3 Loop models, modular invariance, and three-dimensional bosonization	Goldman, H., Fradkin, E.	2018	Physical Review B 97(19),195112

“Turn on” the papers you want to export

Then tell Scopus what you want, how you want it, and then click “Export”

Export document settings ×

You have chosen to export 4 documents

Select your method of export

MINDLLEY RefWorks RIS Format CSV BibTeX Plain Text

EndNote, Reference Manager Excel HTML

What information do you want to export?

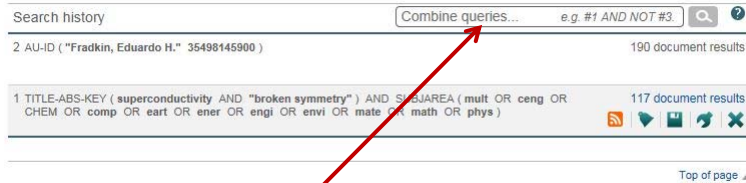
<input checked="" type="checkbox"/> Citation information	<input type="checkbox"/> Bibliographical information	<input type="checkbox"/> Abstract & keywords	<input type="checkbox"/> Funding details	<input type="checkbox"/> Other information
<input checked="" type="checkbox"/> Author(s)	<input type="checkbox"/> Affiliations	<input type="checkbox"/> Abstract	<input type="checkbox"/> Number	<input type="checkbox"/> Tradenames & manufacturers
<input checked="" type="checkbox"/> Document title	<input type="checkbox"/> Serial identifiers (e.g. ISSN)	<input type="checkbox"/> Author keywords	<input type="checkbox"/> Acronym	<input type="checkbox"/> Accession numbers & chemicals
<input checked="" type="checkbox"/> Year	<input type="checkbox"/> PubMed ID	<input type="checkbox"/> Index keywords	<input type="checkbox"/> Sponsor	<input type="checkbox"/> Conference information
<input checked="" type="checkbox"/> Source title	<input type="checkbox"/> Publisher		<input type="checkbox"/> Funding text	<input checked="" type="checkbox"/> Include references
<input checked="" type="checkbox"/> volume, issue, pages	<input type="checkbox"/> Editor(s)			
<input checked="" type="checkbox"/> Citation count	<input type="checkbox"/> Language of original document			
<input checked="" type="checkbox"/> Source & document type	<input type="checkbox"/> Correspondence address			
<input checked="" type="checkbox"/> DOI	<input type="checkbox"/> Abbreviated source title			

“Citation Information” is the default
Can also export bibliographic information, abstract and key words, references, funding details, and “other” information

Zotero uses RIS format

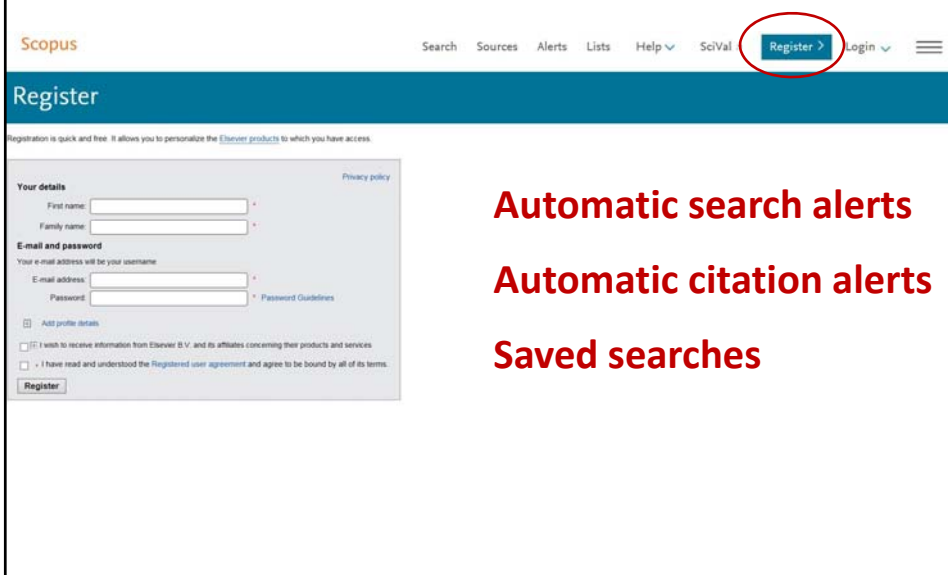
Cancel **Export**

Scopus saves up to 50 searches per session automatically



which can be combined

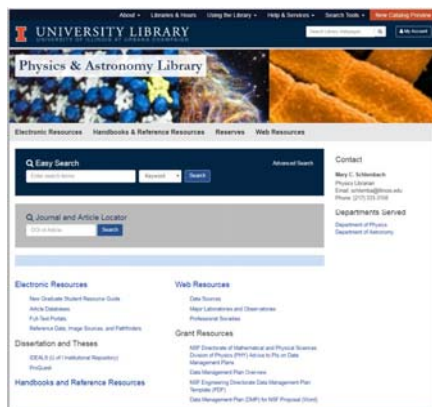
Free registration gives access to additional services



Want to use Scopus* from home?

Log in through the Library gateway at the bottom
of the Physics homepage or go directly to

<http://www.library.illinois.edu/phx/>



cmelliott@illinois.edu

*or any of the Physics electronic resources

<http://physics.illinois.edu/people/Celia>