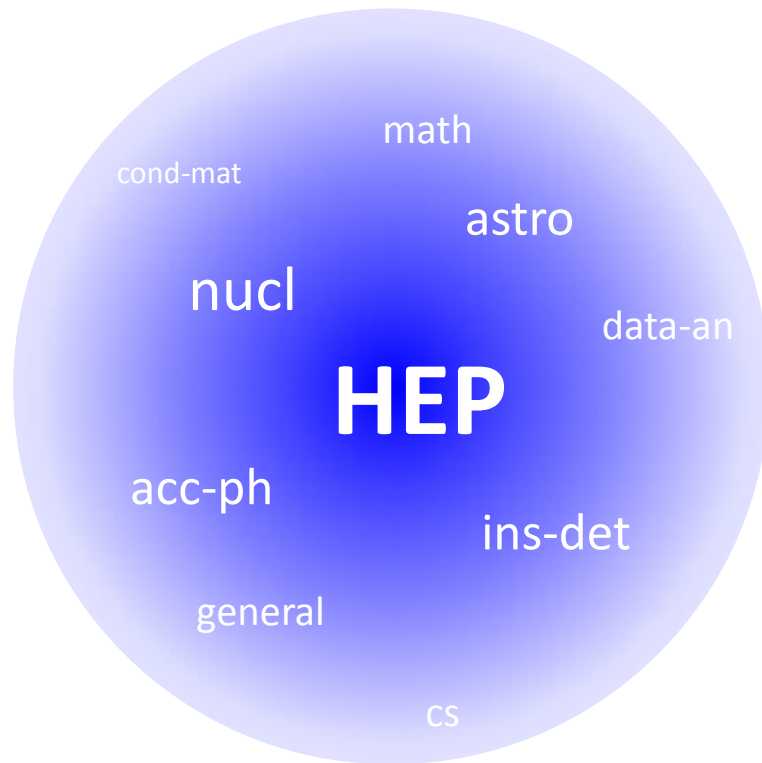


HEPont.rdf

<http://www-library.desy.de/akw/HEPont.rdf>



Based on 3743 keywords
incl. 794 particles

synonyms, regular-expressions

relations: broader, narrower, related

58 887 combinations ⇔ high granularity

Started in 1970's to describe content
Now used for searching and
selection via automatic indexing

With time
keywords change, scope/depth changes

Main Keywords

kT algorithm

b: track data analysis: jet

h: /\\$?[kK]_[tT]\\$?[-\s]algorithm/

phi**n model

b: field theoretical model

c: may be coupled with specific n

H: before 1990 'field theoretical model, scalar'

photino

b: sparticle

i: core

photomultiplier

PMT

photodiode

photocathode

photon sensor

photon

r: X-ray

r: gamma ray

r: radio wave

b: gauge boson

Simple ascii format for editing

All particles are in relation
other terms have to be completed

Comments / descriptions
Historical notes about changes

Some KW are tagged as 'CORE'
used for automatic selection of articles

Composite Keywords

something: fixed point

action: fixed point
dynamical system: fixed point
infrared problem: fixed point
phase space: fixed point
renormalization group: fixed point
 r: asymptotic safety
vector manifestation: fixed point

fixed point: feature

fixed point: boundary condition
fixed point: conformal
fixed point: finite temperature
fixed point: infrared
 IR fixed point
fixed point: non-Gaussianity
fixed point: nonperturbative
fixed point: orbifold
fixed point: stability
fixed point: tadpole
fixed point: ultraviolet
 r: asymptotic safety

High granularity

Maintained &
controlled list of combinations

BibClassify

Code from CERN ⊗ Ontology from DESY

plain phrase matching

relies on synonyms and regular-expressions in ontology

neighboring words ⇔ composite keywords

Output:

Number of composite / single / CORE keywords

1st attempts to determine category

Selection of articles based on number of 'CORE'-keywords

- from full-text (arXiv): no CORE-KW → ignore
- from title, abstract: suggestion

Automatic KW from full-text

[arXiv:1403.6178](https://arxiv.org/abs/1403.6178) [physics.gen-ph] no cross-listing
Investigation of Bouncing Universe and
Phantom Crossing in Modified Gravity Coupled
with Weyl Tensor and its Reconstruction

Core keywords:

10 quintessence
1 quintom
1 k-essence
1 Gauss-Bonnet term
1 unified field theory
1 Brans-Dicke model

Field codes:

a: big bang, sloan digital sky survey
g: force: gravitation,
cosmological model,
gravitation: fundamental constant

Composite keywords:

18 gravitation, model [39, 44]
9 expansion, acceleration [10, 6]
6 field theory, scalar [3, 7]
5 gravitation, Weyl [39, 14]
5 tensor, Weyl [6, 14]
4 gravitation, $f(R)$ [39, 27]
3 phantom, crossing [12, 8]
3 energy, density [6, 4]
2 scale, transformation [17, 3]
2 invariance, conformal [8, 8]
2 action, Einstein-Hilbert [12, 2]
2 expansion, background [10, 2]
1 gravitation, action [39, 12]
1 gravitation, conformal [39, 8]
1 gravitation, coupling [39, 7]
1 inflation, model [3, 44]
1 gravitation, Einstein-Hilbert [39, 2]
1 force, gravitation [1, 39]
1 gravitation, fundamental constant [39, 0]
1 dark energy, holography [21, 5]

Single keywords:

11 cosmological constant
11 cosmological model
10 quintessence
8 dark matter
7 equation of state
7 Robertson-Walker
6 singularity
6 big bang
4 general relativity
4 horizon
4 bounce
4 star
3 sloan digital sky survey
3 boundary condition
3 solar system
3 collapse
3 Einstein
3 WMAP
3 4/3
2 cosmic background radiation

Future

Ontology

- Complete relations
no unrelated keyword
- Complete categories
- Restrict keywords to category
ATLAS, STAR in astro-ph / hep-ex
- CORE / BORDER
tag interesting non-core KW
e.g. dark energy

BibClassify

- Exclude formula
too many Λ , Σ in math
- Be smarter with standard variants
e.g. hyphens
- hadronic Z0 decay
→ Z0, hadronic decay

INSPIRE

- GUI to
browse & navigate through keywords