

# Literature Search Procedures

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## Outline

1. Responsibilities/Schedule
2. Journals and Papers
3. Particle Codes
4. Problems

## Responsibilities/Schedule

- **T**wo persons (Charles Wohl from LBNL and SE from Novosibirsk) are regularly scanning more than 20 journals
- A list includes about 25 journals, sometimes “non-standard” magazines appear, e.g., Nature, PTP or JPSJ
- Papers of potential interest are assigned one or more codes describing particles a paper deals with
- Three times a year (September 15, December 1, January 15) results are sent to overseers at LBNL via Piotr, some important measurements may be added on March 1
- In addition, SE selects papers on unstable mesons to be distributed among the Meson Team members
- Correspondence with major collaborations helps in selection, e.g., already accepted papers are included

## Journals and Papers – I

N	Journal	Papers	N	Journal	Papers
1	Astropart. Physics	1 (0)	13	Phys. Rev. D	160 (93)
2	Nature	2 (0)	14	Phys. Rev. Lett.	201 (20)
3	Science	2 (0)	15	Phys. Lett. B	108 (20)
4	JHEP	29 (2)	16	Phys. Atom. Nucl.	5 (1)
5	Journal of Physics G	3 (2)	17	Part. and Nucl.	0 (0)
6	JETP	0 (2)	18	Part. and Nucl. Lett.	1 (0)
7	JETP Lett.	3 (2)	19	Phys. Rep.	0 (1)
8	Mod. Phys. Lett. A	0 (1)	20	Rev. Mod. Phys.	3 (0)
9	New J. Phys.	1 (0)	21	Physics - Uspekhi	0 (1)
10	Nucl. Phys. A	5 (1)	22	Eur. Phys. J. A	3 (2)
11	Nucl. Phys. B	3 (0)	23	Eur. Phys. J. C	23 (12)
12	Phys. Rev. C	9 (1)	24	J. Cosm. A/P. P.	7 (0)

## Journals and Papers – II

Journal	LBNL, N(%)	CERN, N(%)	All, N(%)
Phys. Rev. D	160 (28.2)	93 (57.8)	253 (34.8)
Phys. Rev. Lett.	201 (35.4)	20 (12.4)	221 (30.4)
Phys. Lett. B	108 (19.0)	20 (12.4)	128 (17.6)
Eur. J. Phys. C	23 (4.1)	12 (7.5)	35 (4.8)
JHEP	29 (5.1)	2 (1.2)	31 (4.3)
Phys. Rev. C	7 (1.2)	1 (0.6)	8 (1.1)
Others	39 (6.4)	13 (8.1)	52 (7.1)

## Journals and Papers – III

Start of LHC physics  $\Rightarrow$  larger fraction of letter publications

Is a fraction of European journals growing?

An example of ATLAS publications in 2011-2012:

Journal	Papers
Phys. Lett. B	53
Eur. Phys. J.	28
Phys. Rev. D	24
Phys. Rev. Lett.	23
JHEP	11
Nucl. Phys. B	2
New J. Phys.	2

## Particle Codes

Each particle has its unique identifier (a code),  
currently 343 (198+145) codes altogether

- Gauge bosons – 9 ( $\gamma$ ,  $g$ , graviton,  $W$ ,  $Z$ ,  $H$ , heavy bosons, axion)
- Leptons – 10
- Quarks – 10 ( $u$ ,  $d$ ,  $s$ , ( $u,d,s$ ),  $c$ ,  $b$ ,  $t$ ,  $b'$ ,  $t'$ , free quarks )
- Stable mesons – 21 ( $\pi$ ,  $\eta$ ,  $K$ ,  $D$ ,  $B$ )
- Baryons – 142 ( $p$ ,  $n$ ,  $N(1440), \dots$ ,  $\Delta(1232), \dots$ )
- Searches – 6 (Monopoles, SUSY, T/C, Compositeness, Extra dim., WIMPs )
- Unstable mesons – 145

LHC can necessitate appearance of new codes:  
we are already using OS for Other Searches

## Problems

- What exactly should we look for in addition to particle properties?  
An example of “Single t-quark production cross section”
- New “particles”, e.g., Dark energy; new minireviews, e.g.,  $\pi(K)$  radii?
- A list of the codes is too long, e.g., too detailed baryons,  
but some important ones are missing:  $|V_{ub}|$ ,  $|V_{uc}|$  are there, but no  $|V_{ud(s)}|$   
Now fixed – a new code RCKM
- Also missing are codes for tests of conservation laws.  
Now fixed – a new code RCON
- What happens with papers on the determination  
of fundamental parameters:  $\alpha$ ,  $\alpha_s$ ,  $f_\pi$ ,  $f_K$ ,  $f_D, \dots$   
Now fixed – a new code RQCD
- Should we select (good) review papers, a code for them?
- Review authors should have access to the results of literature search  
and use them as well as standard averaging in their reviews