

29:225 Literature Search Assignment

Due at the beginning of class, Thursday, Sep 27, 2012.

To hone our skills for performing literature searches, your first assignment is to perform a literature search on a topic unfamiliar to you.

1. Choose a topic that is unfamiliar to you, but in which you have an interest to learn more.
2. Perform a literature search, using any or all of the techniques discussed in class, to find 10 or more papers that together would provide a useful crash-course on the topic. You do *not* need to read through these 10 papers, just skim through them to be sure that they contain useful information for your interests.
3. Review articles are always a nice starting point, so a few of your papers may be review articles (or textbooks), but I also want you to have some more recent papers at the frontier of research on the topic. Please have no more than 4 of your 10 papers as review articles or textbooks.
4. To complete the assignment, turn in a bibliography of your 10 or more papers on the subject, including the following information for each entry: authors, title, journal, volume, page, year. You may choose to use BibTeX, or any other reference management software, to produce your list.

Suggested potential topics:

1. Resistive tearing instabilities and their relation to magnetic reconnection
2. Collisionless magnetic reconnection
3. Collisionless shocks: quasiparallel and/or quasiperpendicular
4. Heating of the solar corona
5. The physics of low mass x-ray binaries
6. Models for solar flares
7. Study of coronal mass ejections
8. Plasma turbulence in the solar wind
9. Plasma turbulence in the interstellar medium
10. Turbulent regulation of the star formation rate
11. Origin and evolution of large scale magnetic fields
12. Models for magnetic substorms
13. The thermodynamics of galaxy clusters
14. Acceleration of solar energetic particles
15. Acceleration of anomalous cosmic rays
16. Acceleration of galactic cosmic rays
17. Cosmic ray transport in the heliosphere
18. Mode conversion between plasma wave types in inhomogeneous plasmas

19. Models of accretion flows: Advection Dominated Accretion Flows (ADAF), Convection Dominated Accretion Flows (CDAF), Radiatively Inefficient Accretion Flows (RIAF)
20. Effects of geomagnetic storms on the electrical power grid and long distance pipelines
21. Radiation belt physics relevant to the upcoming Radiation Belt Storm Probe (RBSP) mission
22. Origin of Saturnian Kilometric Radiation (or more generally, Auroral Kilometric Radiation)
23. Origin of the Whistler Chorus emission in the magnetosphere
24. The physics of the auroral electrojet
25. Global MHD pulsations in dipolar magnetospheres