Abstract

Citation network

Citation network is a bipartite network containing nodes of two kinds: the citing and the cited nodes. Depending on available data and purposes of study the citation networks can represent citations between authors, papers, journals, countries etc. Due to several reasons it was convenient for us to consider the following citation network of CMP:

Some possible features:
- The bibliographic coupling network is relatively weak correlated.
- Some isolated nodes were detected (papers of separate or unusual for CMP directions).
- The nodes with high degree ("hubs") are interdisciplinary papers, reviews or papers which cite "authoritative" persons (hubs in the co-citation network).

Some conclusions

Some conclusions from analysis of data obtained from various networks considered above allows one to draw some conclusions about specific features of the journal as a constituting part of a scientific enterprise. Examples are given by:
- Community structure of the bibliographic couplings and PACS-related paper networks defines the groups of papers connected by the subject area.
- Community structure of the co-authorship network defines the groups of scientists with common research interests.
- The most influential ("classic") authors for particular journal can be identified as hubs in the co-citation network.
- The papers denoted by isolated or weakly connected nodes in the bibliographic coupling network can be recognized as exotic ones in a frame of a given journal.

References

Co-citation network

The co-citation network is a network of papers with common PACS numbers.

Some possible interpretations:
- The nodes with high degree ("hubs") are interdisciplinary papers, reviews or papers which cite "authoritative" persons (hubs in the co-citation network).
- The set of hubs changes when self-citations are ignored.