

Cross domain knowledge discovery, complex system theory and semantic web

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That bibliographic information can be represented as networks is not new. On the contrary, the availability of databases such as the Web of Knowledge have triggered complex network theory to look at co-authorship networks and citation networks with methods from statistical physics. One can state a 'happy marriage' between complexity research in general (and physics in particular) on one side and scholarly communication, bibliometrics and sociology of science on the other side. Having said so, such a fruitful transfer of methods and concepts is less occurring when it comes to other form of scholarly communication and scholarly information, such as visible in collections, libraries, domain specific databases in the SSH and so on.

This paper put a spotlight on such a new area. It does so by presenting the 'sources' or data in this field: the 'objects' as well as the systems under which they are organized (Knowledge Organization Systems). We discuss data models for collections, the problems which comes with their implementation and the result (data graph). As an outlook we highlight those issues which seem to be most promising and also most in need for a complexity-based approach.