

Visualization of relational bibliometric data with the software tool BibTechMon

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The visualization of networks of authors, co-word analysis, co-citation and bibliographic coupled publications has attracted more and more attention in bibliometrics. The software BibTechMon is a tool that was developed to analyze structured and unstructured text data with a focus on scientific publications over the last 15 years. Features of the tool are: parser for the import of structured or unstructured text data, automated indexing, extracting of objects like authors, affiliations, keywords, references, etc.; calculation of networks, and two-dimensional agglomeration of objects like references, publications or keywords, graphical representation of networks and two or three-dimensional maps, navigation tool and graphical retrieval. Different spatial densities are introduced to identify and visualize research fronts in a research field. The densities are based on the position of publications in a two dimensional space calculated by a spring model. The spring force is proportional to the similarity of publications. The density is estimated by the local number of publications. Different densities are measured by the local number of links and also weighted by the strength of the links, i.e. the similarity. Research fronts are agglomerations of similar publications with many strong links with each other. It will be demonstrated how such fronts can be made visible by reducing the noise of publications that do not contribute.