

Scientific topic evolution: interdisciplinary landscape

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The goal of our research is to analyse reaction of an academic community on a particular task which abruptly arises and poses also scientific problems. As a case study, we have chosen to examine a body of research strictly concerning Chornobyl disaster that occurred on 26 April 1986 in Chornobyl (Chernobyl), Ukraine, at the nuclear power plant.

We are interested in several scientometric features of Chornobyl-related research: its multidisciplinary landscape, grows rate, and collaboration strategy. Previously we were concentrated on the comparison of contribution of the international community to the Chornobyl-related research as well as integration of Ukraine in the international research on this subject [1]. Our current purpose is to compare the topic evolution within different scientific disciplines. To this end, we analyze data about the papers that appeared in scientific journals since 1986 using the Scopus database [2]. In particular, the titles and abstracts of the publications were used for the so-called content analysis. Here, the most important terms which are used for description of the Chornobyl-related problems could be detected. It is possible to find the groups of close terms which present separate domains of scientific interest. In order to do this we construct and analyze networks of term co-occurrences.

Similarly to the news tracking within web-space or mass media the scientific topic examination is a problem of current importance. On the one hand, it helps to understand the structure of science. On the other hand, there is a lot of possible practical applications of such analysis starting from classification of publications and ending with “hot topics” detection for funds allocation.

[1] Mryglod O., Holovatch Yu., Bull. Nat. Acad. Sci. of Ukraine, 2012, to appear (in Ukrainian).

[2] <http://www.scopus.com>