

# A case study of a scientific collaboration: Chornobyl-related research as a collective enterprise

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In our study we analyze how does an academic community react on a particular urgent task which abruptly arises and poses also scientific problems. To this end, we have chosen to examine a body of research on Chornobyl disaster that occurred on 26 April 1986 in Chornobyl (Chernobyl), Ukraine, at the nuclear power plant and by now is considered the worst nuclear power plant accident in history. Along with a more recent Fukushima Daiichi nuclear disaster, it is one of the only two nuclear accidents that reached so far Level 7 on the International Nuclear Event Scale. The response of an academic community is evaluated on the base of data about papers that appeared in scientific journals since 1986 and concern Chornobyl disaster.

Our objective is to analyze several scientometric features of Chornobyl-related research: its multidisciplinary landscape, grows rate, and collaboration strategy. To this end, we analyze data about the papers that appeared in scientific journals since 1986. We use both the Scopus database ([www.scopus.com](http://www.scopus.com)) to present the picture on an international scale and the Ukrainian bibliographic database “Ukrainika naukova” ([www.nbuv.gov.ua/db/ref\\_inf.html](http://www.nbuv.gov.ua/db/ref_inf.html)) to consider it on a national level.

In order to quantify our analysis, we measured distribution of papers between different scientific fields, constructed coauthorship network and defined its main characteristics, calculated growth rates of research in different fields. In particular, our analysis allows to compare contribution of the international community to the Chornobyl-related research as well as integration of Ukraine in the international research on this subject.

Furthermore, the content analysis of titles and abstracts of the publications allowed to detect the most important terms used for description of Chornobyl-related problems. In turn, analysis of networks of term co-occurrences made it possible to find the groups of close terms which present separate domains of scientific interest.