

A scientometric analysis of diversity in HEP over the past three decades

Saturday 7 July 2018 09:00 (20 minutes)

This study addresses various aspects of diversity through a scientometric analysis of HEP publications spanning three decades –from the late 80's to date. It analyzes physics and technological research pertaining to high energy physics, and compares the evolution of a set of diversity parameters in this field and in other research domains, such as nuclear physics and astrophysics. The scientometric analysis involves a variety of social and scientific characteristics of the data, such as the geographical distribution of scholarly publications and their share among research and academic institutions, the funding agencies, the association of researchers with formal collaborations, the spectrum of journals in pertinent research areas and evidence of interaction with other fields. The data are collected from the Web of Science and are analyzed by means of econometric methods and techniques pertaining to statistical ecology, such as trend tests, inequality measures and diversity indices. Correlations in evolution patterns are identified by means of statistical inference methods. The results document quantitatively and objectively the evolution of the role of entities traditionally active in HEP research as well the appearance of new players on the scene. Different patterns observed in physics and technological research are discussed; specific features of diversity evolution in HEP with respect to other physics research domains are highlighted.

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Session Classification: Diversity and Inclusion

Track Classification: Diversity and Inclusion