

Scientometric Analysis of Astrophysics Research Output in India Period 1989-2014: Study Based on Web of Science

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ABSTRACT : *This study analyzes the Astrophysics research output in India from the year 1989-2014. The data was downloaded from web of science database which was maintained by Thomson Reuters. The findings of the study revealed that the highest number of publications is in the year 2013 with 913 records. Further the choice of journals, preference of publication, and also the key words frequently used were investigated. The study also applied statistical tools such as Relative Growth Rate (RGR), Doubling Time and Time Series Analysis.*

Key words: Scientometrics; Astrophysics; Histcite; Web of Science; Relative Growth Rate.

INTRODUCTION

Scientometric study is a statistical method of counting to evaluate and quantify the growth of a subject. The research trend during the said time span would be clearly understood from this study and a predictive projection may be made for anticipatable future. There are several areas in science, social science and arts for which scientometric studies were carried out. A number of studies have been accomplished to evaluate research output and productivity in different areas of physics. In 2009, Kumara¹ et al carried out scientometric studies in major areas of physics and engineering sciences. Some other scientometric studies in different subject domains include Jain² (Laser research), Kademani³ (Thorium research), Stanhill⁴ (climatology), Garg⁵ (Laser patent literature), Upadhye⁶ (physics Noble lectures), Lee⁷ (molecular and cell biology), Schummer⁸ (chemistry), Braun⁹ and Gupta¹⁰ (Fullerene research) et al. A number of scientometric studies in the areas of astronomy and astrophysics have also been executed. Basu¹¹ evaluated research output of global astronomy and astrophysics by an analysis of papers in the Science Citation Index identified with a special filter and found out leading Indian institutions and authors. Jamali¹² attempted scientometric analysis from a new angle. The results presented by him revealed interdisciplinary differences within physics and astronomy in terms of reading behaviour. Leta¹³ executed a comparative analysis of Brazilian research trend in astronomy, immunology and oceanography. Davoust¹⁴ studied publishing activities of the astronomers since 1969. Fernández¹⁵ studied transitional steps from individual science to collectivization in astronomy during twentieth century. Uzun¹⁶ studied publication pattern of Turkish astronomers. Marx¹⁷ showed the transition from the static view of the universe to the big bang theory in cosmology through citation analysis. Sen¹⁸ discussed definition and scope of scientometrics for all major science subjects in the context of web resources (cybermetrics).

OBJECTIVES

- To analyze the year wise publication of Astro physics research output in India.
- To determine the growth rate of publications using RGR and Doubling Time.
- To find out the publication trend using Time series analysis .
- To determine the document wise distribution of publication.
- To identify keywords frequently used in Astro physics research in India.
- To analyze Half Period Comparison

METHODOLOGY

The data for the study were retrieved from web of science database which is a scientific and indexing service maintained by Thomson Reuters. The Astro Physics research output of India was analyzed. The bibliographic details such as authors, document types, collaboration etc were analyzed using Histcite which is a software package used for bibliometric analysis and information visualization.

ANALYSIS

A total of 12750 astro physics records were published in India. The research output was analyzed using various scientometric indicators.