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**Measuring diversity and coherence using hierarchical APS-PACS classification of sub fields of physics and their impact on citations.** SHIV-AKUMAR JOLAD, MURALI KRISHNA ENDURI, I. VINOD REDDY, IIT Gandhinagar — American Physical Society introduced Physics and Astronomy Classification Scheme (PACS) in 1975 to classify different subfields of physics in a hierarchical tree structure. Since 1985, almost all the physical review articles include the PACS code to refer different subfields it belongs to. In this work, we define the notion of diversity of articles and authors based on the PACS codes they are associated with, using Weitzmann diversity index, from 1985-2012. We find that the fraction of authors with high diversity is increasing with time, whereas the fraction of least diversity are decreasing, and moderate diversity authors have higher tendency to switch over to other diversity groups. By measuring the interconnectedness among the PACS codes, we define measures of coherence of papers and authors. The diversity and coherence captures the dimensions of Interdisciplinarity. Based on which we study the correlation between Interdisciplinarity (within sub fields of physics) and citations. We find that the diversity index of articles is correlated with the citations they received in a given time period from their publication year. Articles with lower and higher end of diversity index receive lesser citations than the moderate diversity papers.

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