Another Axiomatization of the Hirsch index

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Abstract

We axiomatize the Hirsch index (or the h-index,) that is a well-known index evaluating a researcher's productivity and impact on a filed. We formalize a new axiom called head-independence meaning that decreasing the number of times of some papers each of which was cited too much times has no impact on an index. Together with symmetry and axiom D, head-independence uniquely characterizes the h-index, and some relationships between our axiomatization and those in literature are investigated.

Keywords: h-index, axiomatization, symmetry, head-independence

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