

Bilinear effect in complex systems

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A new, generic type of Zipf-plot behavior in complex systems has been discovered. This Zipf plot does not obey the power law or stretched-exponent distribution but appears as two monotonically decreasing straight lines intersecting each other. This is called the Bilinear Effect. Examples from real systems (including lifetime distributions of Chinese dynasties) are presented. A 3-layer network model that leads to the bilinear effect is given.

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