

## **Maximal Diversity and Zipf's Law**

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Zipf's law describes the empirical size distribution of the components of many systems in natural and social sciences and humanities. We show, by solving a statistical model, that Zipf's law co-occurs with the maximization of the diversity of the component sizes. The law ruling the increase of such diversity with the total dimension of the system is derived and, as an example, we show that our analytical results compare very well with linguistics datasets.