p-Adic numbers and complex systems

Abstract

p-Adic and general ultrametric models can be used for modeling of complex systems. Examples of ultrametric models include applications to spin glasses, proteins, genetic code, to hierarchical clustering, and to wavelets. In particular multiclustering (a family of cluster trees constructed using a family of metrics) are related to affine Bruhat-Tits buildings and give an example of multidimensional hierarchy.