

**Hierarchically nested time series models from dendrograms**

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We introduce a method to associate a hierarchically nested factor model to a multivariate data-set characterized by a dendrogram. By using a bootstrap based procedure we are able to obtain the hierarchically nested factor model with the largest number of factors compatible with a predefined threshold of statistical reliability of dendrogram nodes. As an application of the described technique we examine a real system monitored by recording the set of daily equity return of 100 highly capitalized stocks traded at the NYSE during the period 1995-1998 and we find that the obtained model describes the market in terms of the economic sectors of the stocks.

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[1] M. Tumminello, F. Lillo, and R.N. Mantegna, <http://lanl.arxiv.org/abs/cond-mat/0511726>

[2] Michele Tumminello, Claudia Coronello, Fabrizio Lillo, Salvatore Miccich, Rosario N. Mantegna, <http://lanl.arxiv.org/abs/physics/0605116>