

## MULTISTREAM A Multiresolution Streamgraph **Approach to Explore Hierarchical Time Series**

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#### **Time Series**

A time series is a sequence of quantitative values taken at successive times.

- Examples
  - Meteorology: registers of rain over a period of time
  - Finances: evolution of the price of the currency over time





#### **Time Series**

#### Usually plotted using a line chart / dot plot





November December

#### **Multiple** Time Series



December

#### **Multiple** Time Series

Some visualization problems:

- Readability
- Scalability



#### **Multiple** Time Series

# Identification of patterns over time



## A better visualization than line chart / dot plot for multiple time series ?



# Stackgraph

Time series are represented by colored layers



## Streamgraph

#### Base line is on the middle Y axe



Graphics, 14(6):1245–1252, (2008)]

# Streamgraph

Some visualization problems:

- Readability
- Scalability



# How to improve **readability/scalability** of Multiple Time Series?



















#### MULTISTREAM IN ACTION

VIDEO















Context







2000 2001	2002 20	soul	2005 2006
		contemporary jazz	
z 📃		class	
		alternative metal	
		power metal	
ai			
		black i	
 	•		







#### Multiresolution view

S = screen display size



#### Controller





#### Link between the overview and the multiresolution view











### Hierarchy manager

- Navigation through the different levels of the hierarchy
- Allows aggregation and disaggregation in the hierarchical structure
- **Exploration**: filtering, highlighting



#### Conclusions



