

Visualizing Hierarchical Time Series with a Focus+Context Approach

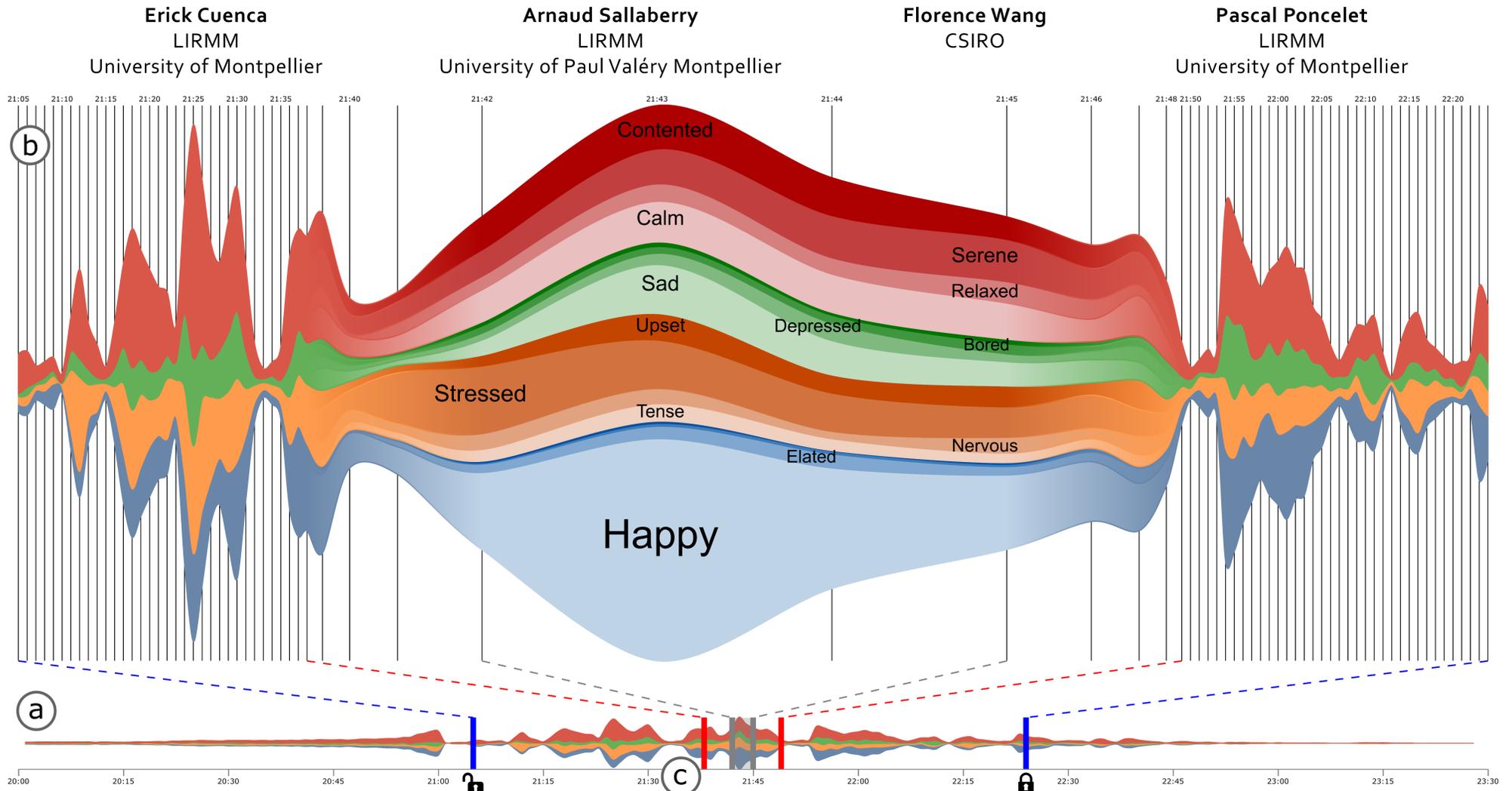


Fig.1. (a) An **overview** depicts time series in a high level of abstraction. (b) **Multiresolution view** depicts time series in different levels of abstraction. (c) **Controller** links the overview and the multiresolution view.

When dealing with several time series scalability problem overcome. **To solve this problem, multiple time series can be organized into a hierarchical structure.** We introduce a Streamgraph-based approach to convey this hierarchical structure. Based on a focus+context technique, our visualization allows time series exploration at different granularities (e.g., from overview to details).

CONTRIBUTIONS

- A **Streamgraph-based** approach to convey the hierarchical structure of multiple time series.
- A **multiresolution view** to depict the hierarchical organization of time series at different levels of abstraction (i.e., aggregation/disaggregation of time series).

APPROACH

OVERVIEW

Fig.1. (a) shows a Streamgraph of the entire multiple time series in a high level of abstraction. The highest level represents the top in the hierarchy structure and the thickness of a layer conveys the sum of time series in the group.

MULTIRESOLUTION VIEW

This view depicts time series on different levels of granularity (the top and the lowest level of the hierarchy in one view).

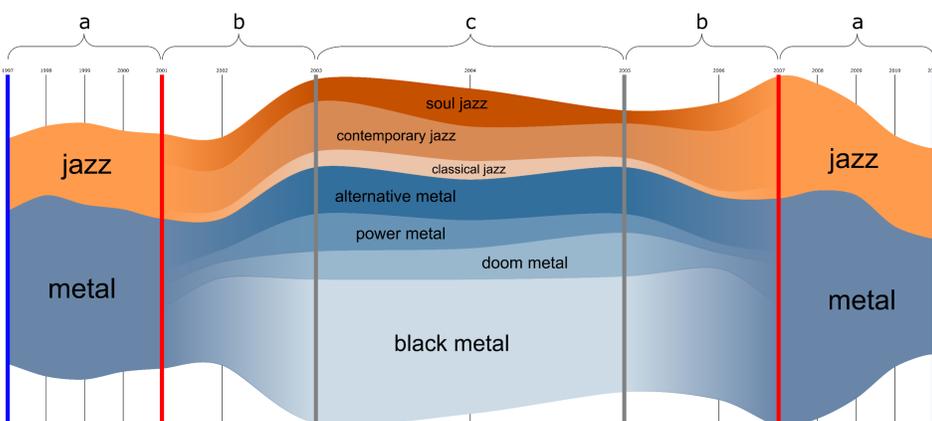


Fig.2. (a) **context-areas** depict the top level of the hierarchy, (c) **detailed-area** depicts the lowest level of the hierarchy, and (b) **transition-areas** depict the transition between the context-area to detailed-area, and vice versa. Color interpolation is used in this area.

CONTROLLER

This movable/collapsible tool is designed over the overview to handle the intervals of time used by areas in the multiresolution view.

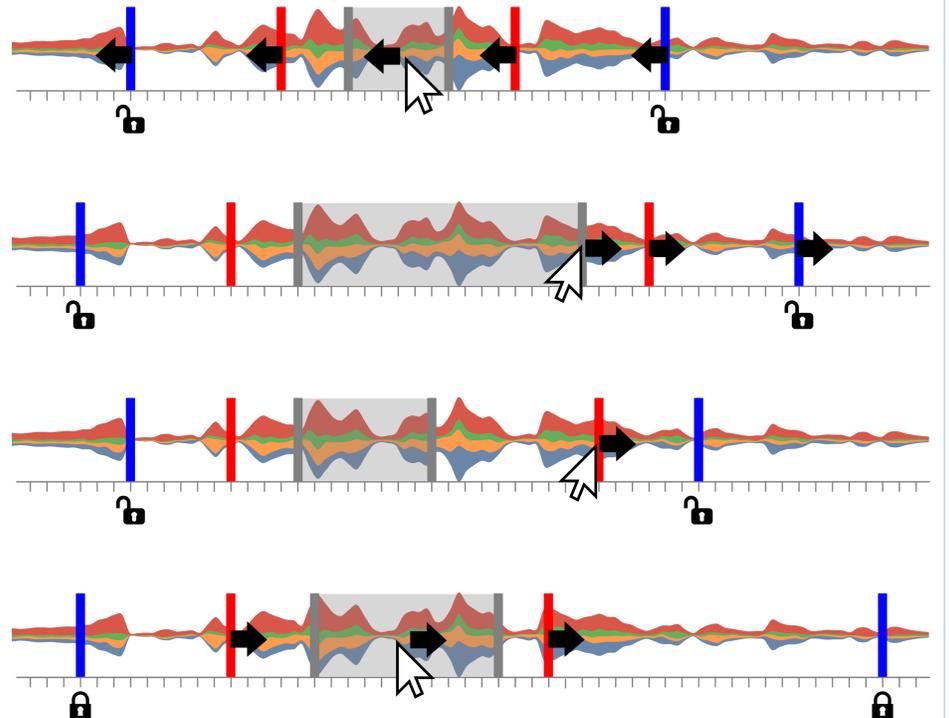


Fig.3. Custom configuration. Context-areas are handled by the **blue lines**. Transition-areas are handled by the **red lines**. Detailed-area by **grey lines**.

