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   Nota di contenuto   Introduction -- Sensor Networks and Data Streams: Basics -- Geodata
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                        Data Surveillance -- Sensor Data Analysis Applications.

   Sommario/riassunto   Emerging real life applications, such as environmental compliance,
                        ecological studies and meteorology, are characterized by real-time data
                        acquisition through a number of (wireless) remote sensors. Operatively,
                        remote sensors are installed across a spatially distributed network; they
                        gather information along a number of attribute dimensions and
                        periodically feed a central server with the measured data. The server is
                        required to monitor these data, issue possible alarms or compute fast
                        aggregates. As data analysis requests, which are submitted to a server,
                        may concern both present and past data, the server is forced to store
                        the entire stream. But, in the case of massive streams (large networks
                        and/or frequent transmissions), the limited storage capacity of a server
                        may impose to reduce the amount of data stored on the disk. One
                        solution to address the storage limits is to compute summaries of the
                        data as they arrive and use these summaries to interpolate the real data
                        which are discarded instead. On any future demands of further
                        analysis of the discarded data, the server pieces together the data from
                        the summaries stored in database and processes them according to the
                        requests. This work introduces the multiple possibilities and facets of a
                        recently defined spatio-temporal pattern, called trend cluster, and its
                        applications to summarize, interpolate and identify anomalies in a

sensor network.   As an example application, the authors illustrate the application of trend cluster discovery to monitor the efficiency of photovoltaic power plants. The work closes with remarks on new possibilities for surveillance gained by recent developments of sensing technology, and with an outline of future challenges.