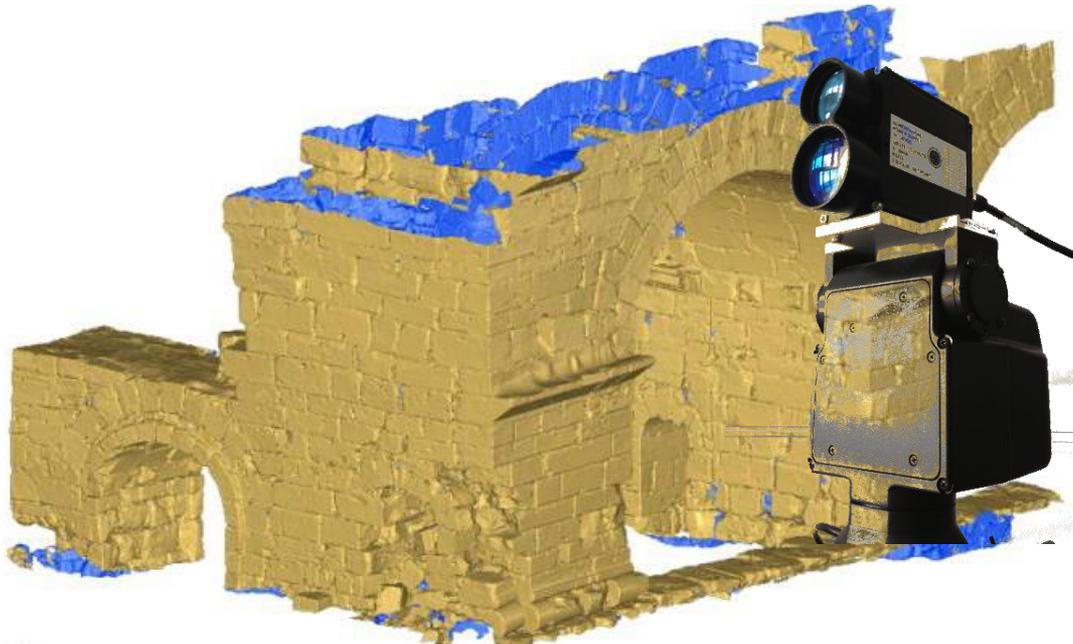


Continuous structural and geotechnical monitoring

This invention is intended for the continuous and real-time monitoring of structures and for geotechnical monitoring applications. The equipment is permanently installed on-site to measure the variation of position in time of prefixed points. Typical applications include archaeological sites, rock masses, mines, dams, structures with foundation settlements.



Keywords

Continuous monitoring

Automated data processing

Built and tested prototype

Civil engineering

Check of prefixed points

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Continuous structural and geotechnical monitoring

Description

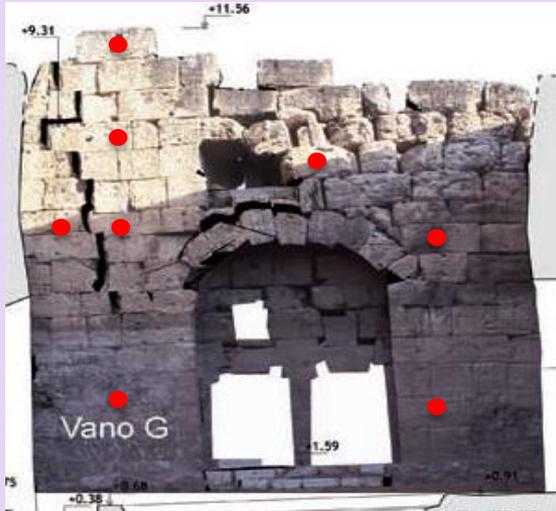
Structural and geotechnical monitoring is traditionally done with sensors at discrete positions or by technologies based on processing laser scanning or photographic data.

However, the installation of sensors is extremely difficult and expensive in the case of large structures, archaeological sites, rock fronts. Moreover, the use of laser scanning systems requires long processing time and high cost.

The present invention is based on the check of the position at prefixed points in

given time intervals and on real time data processing. It solves such monitoring application environments with a low-cost product permanently installed on-site with the ability of directly notifying warning or alarm conditions.

A weather-proof prototype of the invention has been built and several indoor and outdoor measurement campaigns have been carried out to get first results from the instrumentation.



Applications

- Continuous and permanent structural monitoring
- Continuous and permanent monitoring of excavation or rock fronts
- Archaeological site monitoring
- Long term stability check of earth retaining structures or landslides

Advantages

- Rapid instrumentation installation and no need for human intervention after installation.
- New application environments, actually uncovered or too expensive with traditional approaches
- Low instrumentation cost

