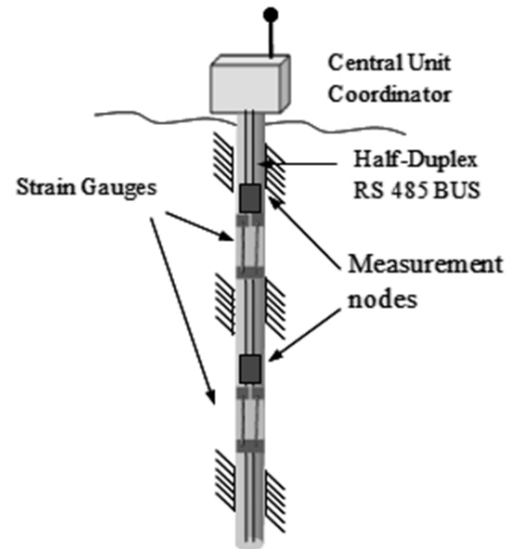


## 15ST151 Measurement of Landslide Displacement and Orientation using Strain Gauges Based on Amorphous Magnetic Microwires

Daniel Petrisor<sup>138</sup>, Cristian Fosolau<sup>138</sup>, Cristian Zet<sup>138</sup>, Catalin Damian<sup>138</sup>

In this paper, we present the performance of a landslide transducer based on magnetic strain gauges and the interpretation of experimental results. Analysis of landslide data indicates that the land displacements measured with our transducer are correlated to the movements measured at the ground surface. Evaluating the landslide data, we have established a relationship between the system readings and the landslide movement. Measurements regarding landslide displacement and orientation were done using strain gauges based on amorphous magnetic microwires (MAW). In order to evaluate a larger area, our system uses a grid of measurement points containing multiple measurement nodes. Each measurement node acquires displacement and orientation information reporting the data through RS485 to the central unit coordinator. Measurement information from central unit coordinators across the grid is transmitted wirelessly to a server for storage and alerting actions.

Keywords: landslide displacement, strain sensor, amorphous magnetic microwires

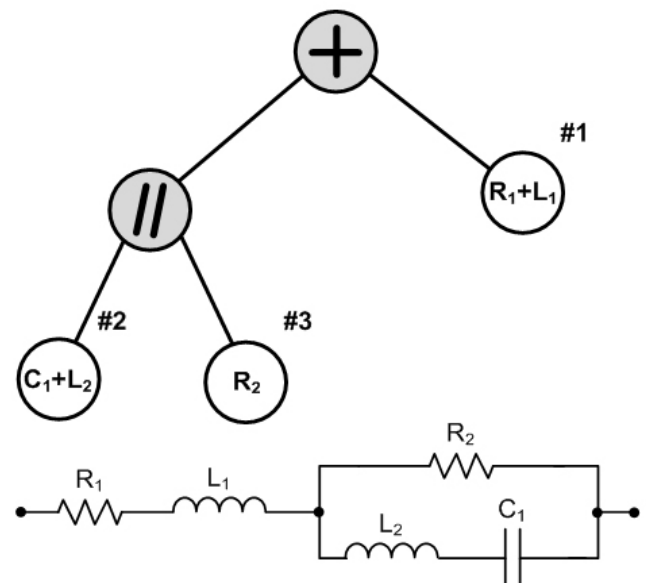


*Measurement point structure a) central unit coordinator, b) strain gauges, c) measurement nodes, d) RS485 communication BUS*

## 16IC039 Improving the convergence of gene expression programming in impedance spectroscopy

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This paper describes the latest major improvement made to gene expression programming (GEP) for use in impedance spectroscopy. This change consists on systematically analysing the fittest element of each population of the GEP, to identify circuit components that are useless in the sense that they do not significantly contribute to the impedance response at the analysed frequency range.



*Example of tree structure and corresponding impedance circuit.*