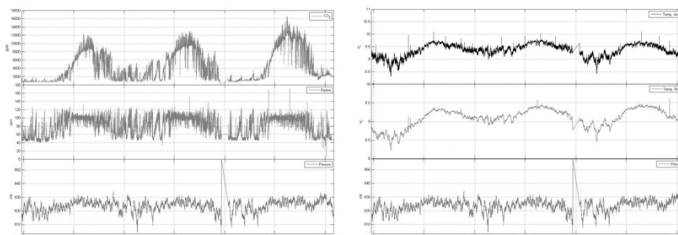




## 11PE107 Low Power and High Efficiency Energy Acquisition Systems for Volcano Monitoring

Angel David Moure<sup>93</sup>, Pedro Torres<sup>93</sup>

Two acquisition systems have been developed to acquire low sampling rate parameters (volcanic gases content and meteorological parameters) related with volcano activity. The first device (gDT316) is a 16 bits five-channel datalogger with SD storage. The second one (gCNT16) is a simple three-channel 16 bits counter with EEPROM storage. Their main characteristics are low power consumption and low cost manufacturing. Here we describe both devices and the first three examples applied on volcano monitoring network (Tenerife Island, Spain).

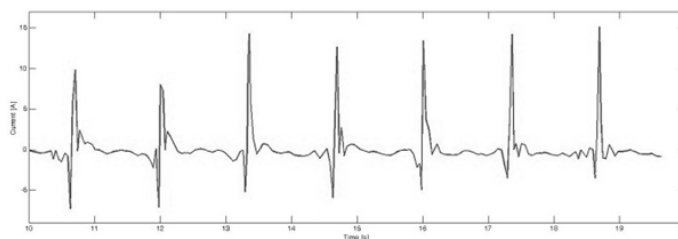


**Data plotted from 2008 to 2012. Left: CO<sub>2</sub> air concentration (green), <sup>222</sup>Rn counts per minute (pink) and Barometric pressure (blue). Right: ambient T° (black), soil T° (red) and Barometric pressure (blue).**

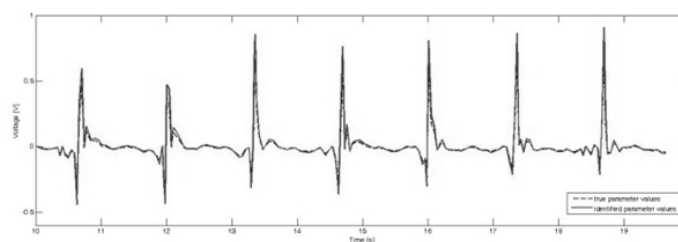
## 11PE108 Measurement technique for online EV battery state of life monitoring

George Gross<sup>94</sup>, Marco Landi<sup>95</sup>, Consolatina Liguori<sup>95</sup>, Vincenzo Paciello<sup>95</sup>

An effective management of battery electric vehicles and implementation of vehicle-to-grid programs requires being able to monitor battery parameters to assess the state of the battery. Current techniques have reached good accuracy, but usually require long measurement procedures and powerful hardware that makes them unfit for online battery monitoring. In this paper a one-shot measurement technique and the first experimental results for battery parameter estimation are presented: it is fast and can be implemented on a low-cost microcontroller to realize online battery monitoring. Additional experimental activity on different kind of batteries and implementation on M4 will be provided in the full paper.



**Current stimulus**



**Voltage response with real and identified parameter values**