

Scout: WEST Systems compact  
fluxmeter



# Scout: WEST Systems compact fluxmeter

Scout is a portable and very compact instrument for the flux measurement based on the accumulation chamber method. Scout is the latest version of the WEST Systems portable fluxmeter, very light and easy to handle.



## Operating principles

The fluxmeter is equipped with the Vaisala GP343 carbon dioxide detector. Its working principle is exactly the same as the classical



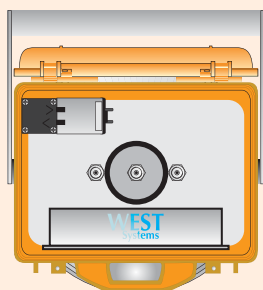
fluxmeter.

The only remarkable difference consists of the absence of an electromechanical mixing device that is substituted by a long porous tube that allows a perfect mixing of the gas inside the accumulation chamber. The carbon dioxide detector is placed following the longitudinal axis of the chamber.

The efficiency of the new mixing device was demonstrated by the linearity of the measured concentration versus time curves and by the correct instrument response during the lab test; before the actual implementation of the instrument several laboratory and on-field tests were performed, firstly by WEST Systems and later by E. Padron and P.Hernandez of the ITER group (Tenerife, Spain).

The microcontroller that manages the system, the battery and the pump are hosted in a box on the top of chamber; the same box can host also a hydrogen sulfide or a hydrocarbons detector. The instrument is managed by a specific software that runs on a palmtop computer connected to the fluxmeter via Bluetooth.

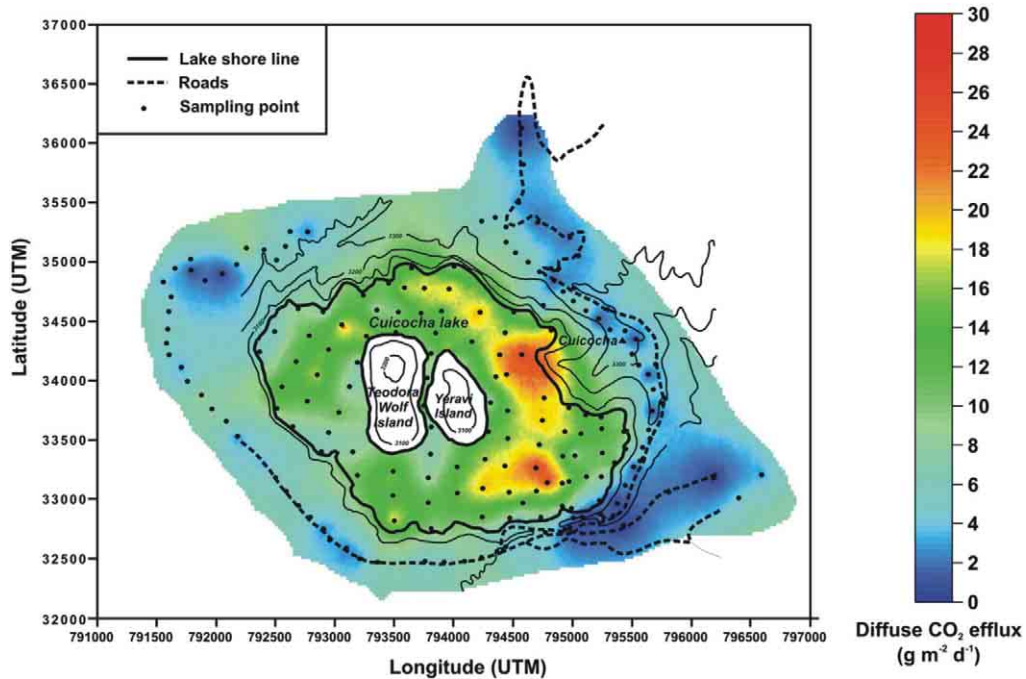
## Wireless Bluetooth connection



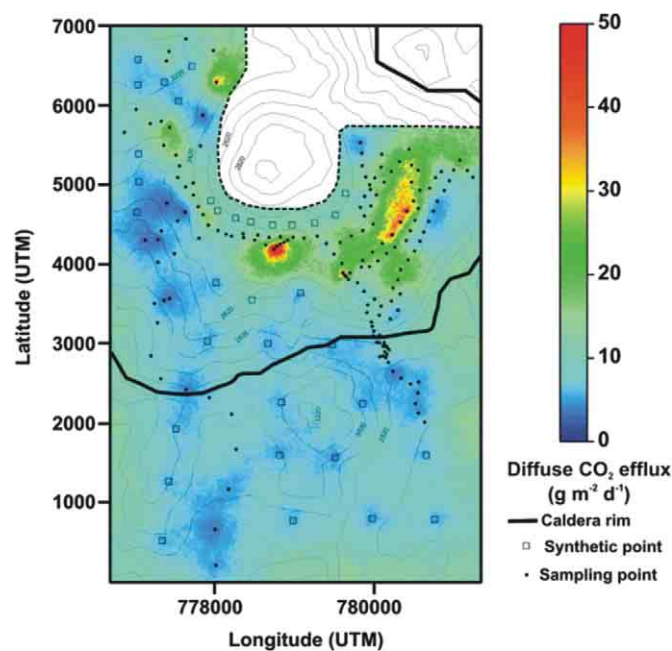
**Bluetooth** ®  
wireless connection



In the picture the results of some flux mapping performed with Scout



Spatial distribution of the average of the 100 sequential Gaussian simulations obtained for the Cuicocha volcano. (Da Padrón et al. 2008. Diffuse CO<sub>2</sub> emission rate from Pululahua and the lake-filled Cuicocha calderas, Ecuador)



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