

ECOSYSTEM STATION

Name:	Bosco Fontana (IT-BFt)
Location (lat-long):	Marmirolo MN (Po valley, Italy), 45,2022 – 10.7427, 37 m a.s.l..
Environment:	Oak-Hornbeam forest.
Operational history:	2012 – present.
Scientific purpose:	To understand the gas (greenhouse and non-greenhouse ones) exchange between the forest and the atmosphere using the eddy covariance technique for the measurement of the fluxes.
Station description:	<p>The Bosco Fontana (BF) station is a micrometeorological tower located in the middle of the Po valley, in the northern Italy.</p> <p>The BF station main peculiarities are the location, a very polluted area with intense agriculture activity, and the extension of the forest, 230 ha, since no such big forests are still present in the Po valley. The forest, 26 m tall, is an Oak-Hornbeam forest (nearly 70% of the coverage is constituted by these two species) and it is a relic of the original Po Valley forests.</p> <p>The tower is 40 m tall and is equipped on the top with micrometeorological instrumentation for the measurement of turbulent fluxes (H, LE, CO₂, O₃, PM) with the eddy covariance technique. Vertical profiles of CO₂, NO, NO₂, O₃ concentration, temperature and relative humidity are measured too. Additional measurements are available on the top of the tower (net radiation, rainfalls, total/incident/diffuse PAR, atmospheric pressure) and at the bottom (soil water content and temperature, soil heat flux). Soil CO₂ fluxes are measured too with an automated homemade system.</p>
Measured ICOS core parameters:	Turbulent fluxes of CO ₂ , H and LE. Vertical profile of CO ₂ , air temperature and relative humidity, net radiation, rainfalls, total/incident/diffuse PAR, atmospheric pressure, soil water content and temperature, soil heat flux, soil CO ₂ fluxes.
Measured ICOS desirable parameters:	Many ICOS parameters are measured but with instrumentation which is not included in the ICOS protocols so an instrument upgrade would be desirable.

Other measured parameters:

O₃ fluxes, O₃, NO and NO₂ vertical profile, PM fluxes (for short campaigns).

Responsible organization:

Università Cattolica del Sacro Cuore

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Università Cattolica del Sacro Cuore

Air temperature and PAR probes on the top of the tower



Radiation probes on the top of the tower



Automated system for soil CO₂ fluxes



Micrometeorological instrumentation on the top of the tower

