

Table 1: List of specific instruments working at the considered test sites during the study period. Sites are listed in alphabetical order according with their classifications (remote; not-remote). ICOS-labelled sites are identified by an asterisk.

Classification	Site (acronym, country)	Sampling heights (above ground level)	Species	Instrument model #ICOS-ID; start date - end date
Remote	Monte Cimone * (CMN, Italy)	8 m	CO ₂ , CH ₄ , CO	Picarro G2401 #590; 1/1/2019 - 31/12/2020
	Jungfrauoch * (JFJ, Switzerland)	5 m	CO ₂ , CH ₄	Picarro G2401 #225; 1/1/2019 - 15/10/2019 Picarro G2401 #226; 15/10/2019 - 26/11/2020 Picarro G2401 #529; 23/12/2020 - 31/12/2020
			CO	Picarro G2401 #529; 23/12/2020 - 31/12/2020 Picarro G2401 #226; 15/10/2019 - 26/11/2020 Picarro G2401 #225; 1/1/2019 - 15/10/2019 LGR 913-0015 (EP) ; #412; 1/1/2019 - 7/1/2020
	Pic du Midi (PDM, France)	10 m	CH ₄	Picarro G2401 #222; 2014/11/1 - 2015/12/31
	Utö - Baltic sea * (UTO, Finland)	57 m	CO ₂ , CH ₄ , CO	Picarro G2401 #489; 1/1/2019 - 11/12/2020 Picarro G2401 #999; 11/12/2020 - 31/12/2020
	Zugspitze * (ZSF, Germany)	3 m	CO ₂ , CH ₄	Picarro G2301 #880; 13/1/2021 - 31/12/2021
CO			LGR 913-0015 (EP) ; #1073 131/1/2021 - 18/12/2021	
Not-remote	Ispira * (IPR, Italy)	40 m, 60 m, 100 m	CO ₂ , CH ₄ , CO	Picarro G2401 #619; 1/1/2019 - 31/12/2020
	Jussieu Paris (JUS, France)	30 m	CO ₂ , CH ₄ , CO	Picarro G2401 #527; 1/1/2019 - 31/12/2020
	Karlsruhe * (KIT, Germany)	30 m, 60 m, 100 m, 200 m	CO ₂ , CH ₄ , CO	Picarro G2401 #489 31/1/2019 - 28/3/2019 Picarro G2301 #458 28/3/2019 - 31/12/2020
			CO	Picarro G2401 #489 31/1/2019 - 28/3/2019 LGR 913-0015 (EP) #702; 5/8/2019 - 31/12/2020
	Puijo * (PUI, Finland)	47 m, 84 m	CO ₂ , CH ₄	Picarro G2301 #102; 1/1/2019 - 31/12/2020
	Saclay * (SAC, France)	15 m, 60 m, 100 m	CO ₂ , CH ₄ , CO	Picarro G2401 #329; 1/1/2019 - 31/12/2020 Picarro G2401 #395; 1/1/2019 - 31/12/2020
CO			Picarro G2401 #395; 1/1/2019 - 31/12/2020 Picarro G5310 #781; 23/01/2019 - 31/12/2020	