Physical parameter or process	Description	Setting used in OPERA
Forward radiative transfer model	LIDORT-A	van Oss and Spurr (2002)
	number of streams	6
Raman scattering	on/off option in LIDORT-A	off
O_3 absorption cross section	temperature-parameterised database using five temperatures	Malicet et al. (1995)
O_3 profile climatology	a priori O_3 profile climatologies	McPeters et al. (2007)
Temperature	temperature profile	ECMWF reanalysis
Noise floor	relative error of measured reflectance	0.015 (for all data sets)
Retrieval method	optimal estimation	Rodgers (2000); van der A et al. (2002)
Wavelength window	variable bands	265–330 nm
	blocked MgI and MgII lines	284.5–286.5 nm, 278.0–280.5 nm
Maximum number of iterations	convergence based on decrease of the relative cost function	10
Pressure grid	number of layers for retrieval	31
	pressure levels	1000.0, 749.89, 583.48, 421.7, 316.23, 237.14, 177.83, 133.35, 100.0, 74.99, 56.23, 42.17, 31.63, 23.71, 17.78, 13.33, 10.0, 7.5, 5.62, 4.22, 3.16, 2.37, 1.78, 1.33, 1.0, 0.75, 0.56, 0.42, 0.32, 0.24, 0.18, 0.13 hPa
Fit parameters	ozone column per layer	
	surface albedo or cloud albedo	if cloud fraction < 0.20, surface albedo or else cloud albedo
Cloud model	effective cloud fraction and cloud height	FRESCO+ (Wang et al., 2008)