

Parameter	Value	Standard deviation
Measurement		
HLR (1994-2013)	Measured	Poisson statistics
LLR (1999-2013)	Measured	Poisson statistics
Retrieval parameters (a priori)		
Temperature profile	taken from CIRA-86	35 K
Background for LLR	Average of photocounts above 90 km	SD above 90 km
Background for HLR	Average of photocounts above 115 km	SD above 115 km
Dead time for LLR and HLR (1999–2011)	10 ns	5.7 and 11.19 %, respectively
Dead time for HLR (2012–2013)	4 ns	0.5 %
Lidar constant for HLR	Estimated using forward model (55–60 km)	10 %
Lidar constant for LLR	Estimated using forward model (45–50 km)	10 %
Forward model parameters		
Pressure profile	Fleming et al. (1988)	5 %
Ozone density	McPeters et al. (2007)	4 %
Ozone cross section	Griggs (1968)	2 %
Acceleration due to gravity	Mulaire (2000)	0.001 %
Rayleigh-scattering cross section	Nicolet (1984)	0.2 %
Air number density	CIRA-86	5 %