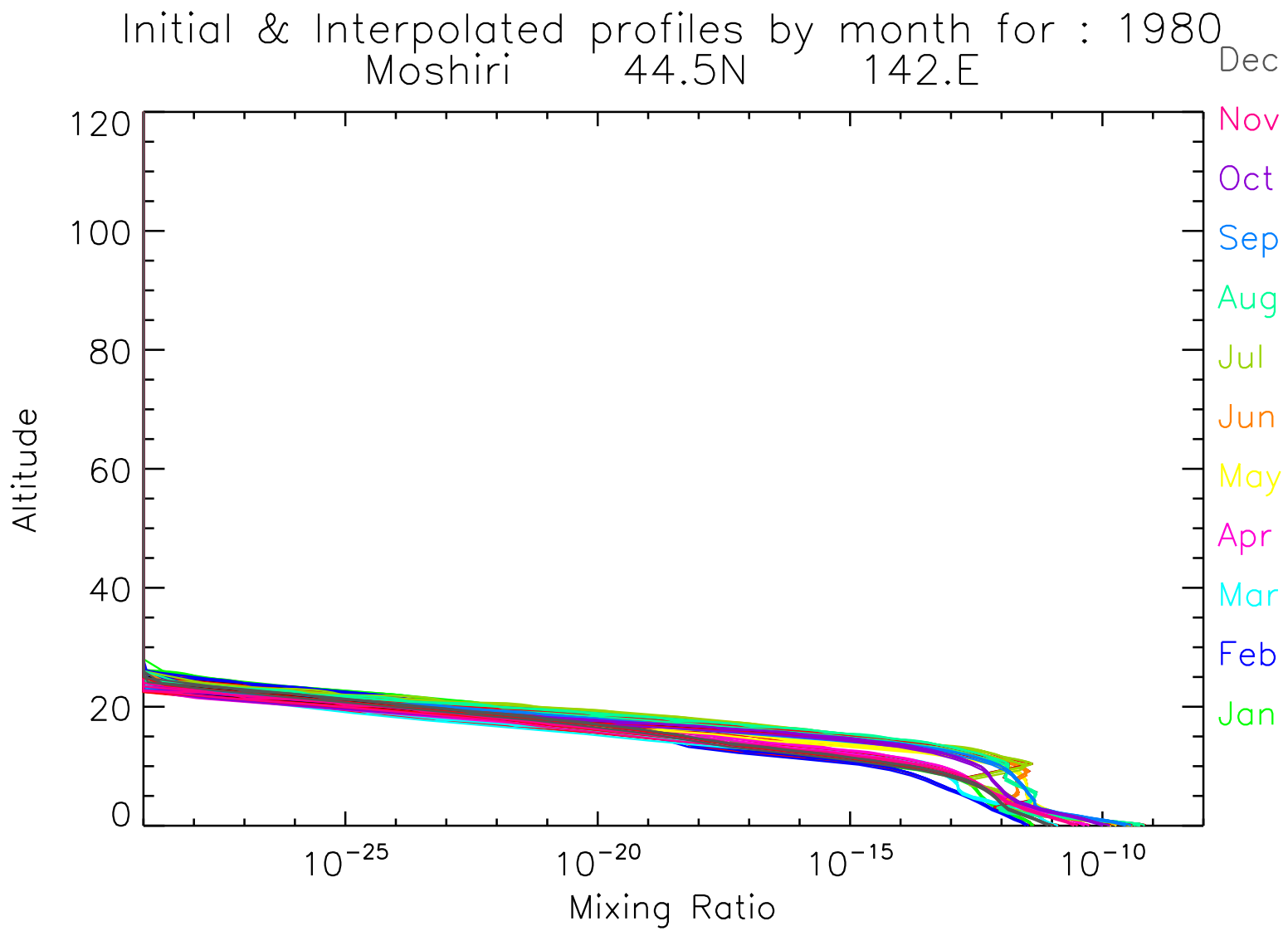
Initial & Interpolated profiles by month for : 1980
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
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Jan
120
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80
60
40
20
0
Altitude
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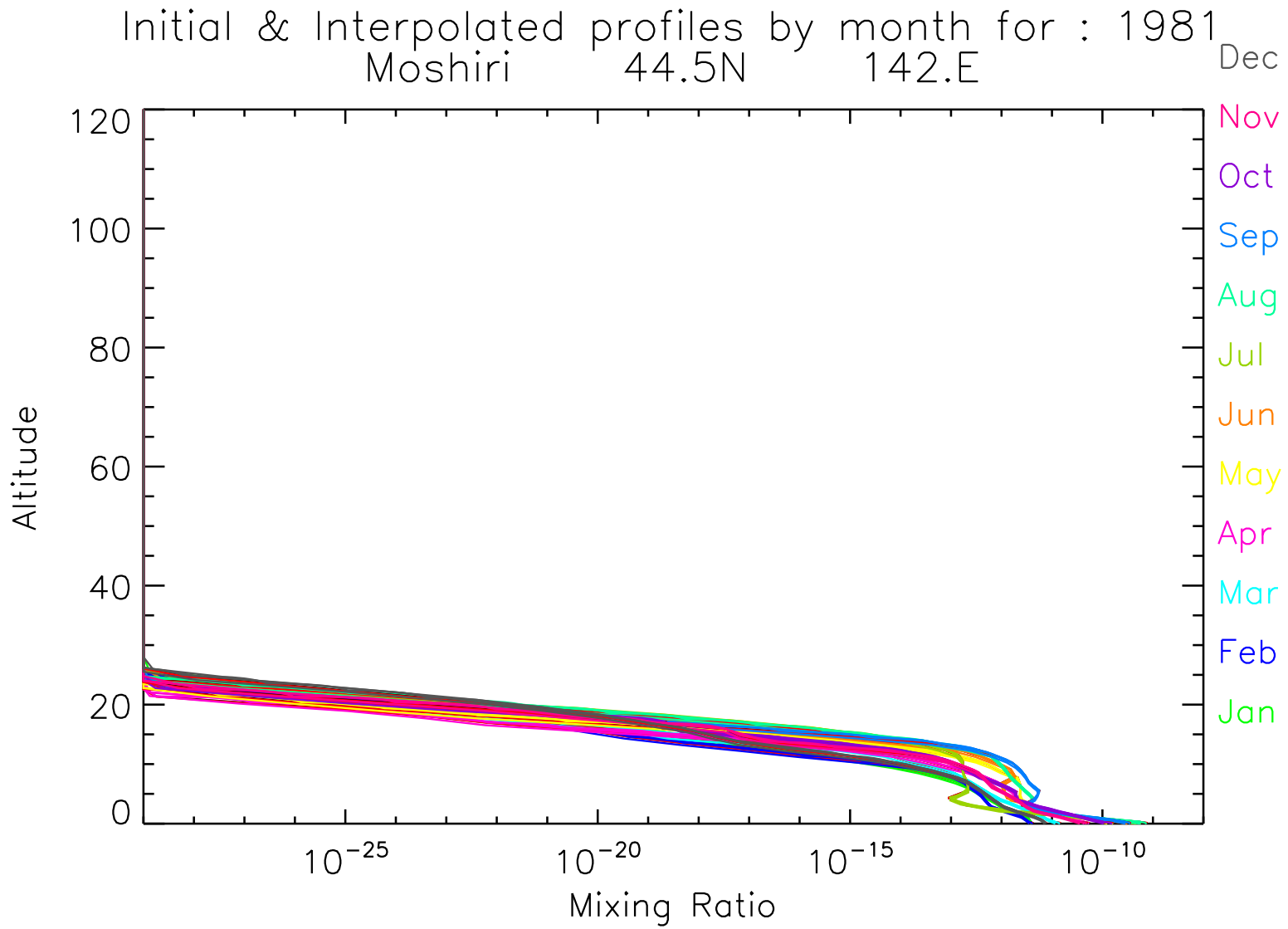
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1981
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
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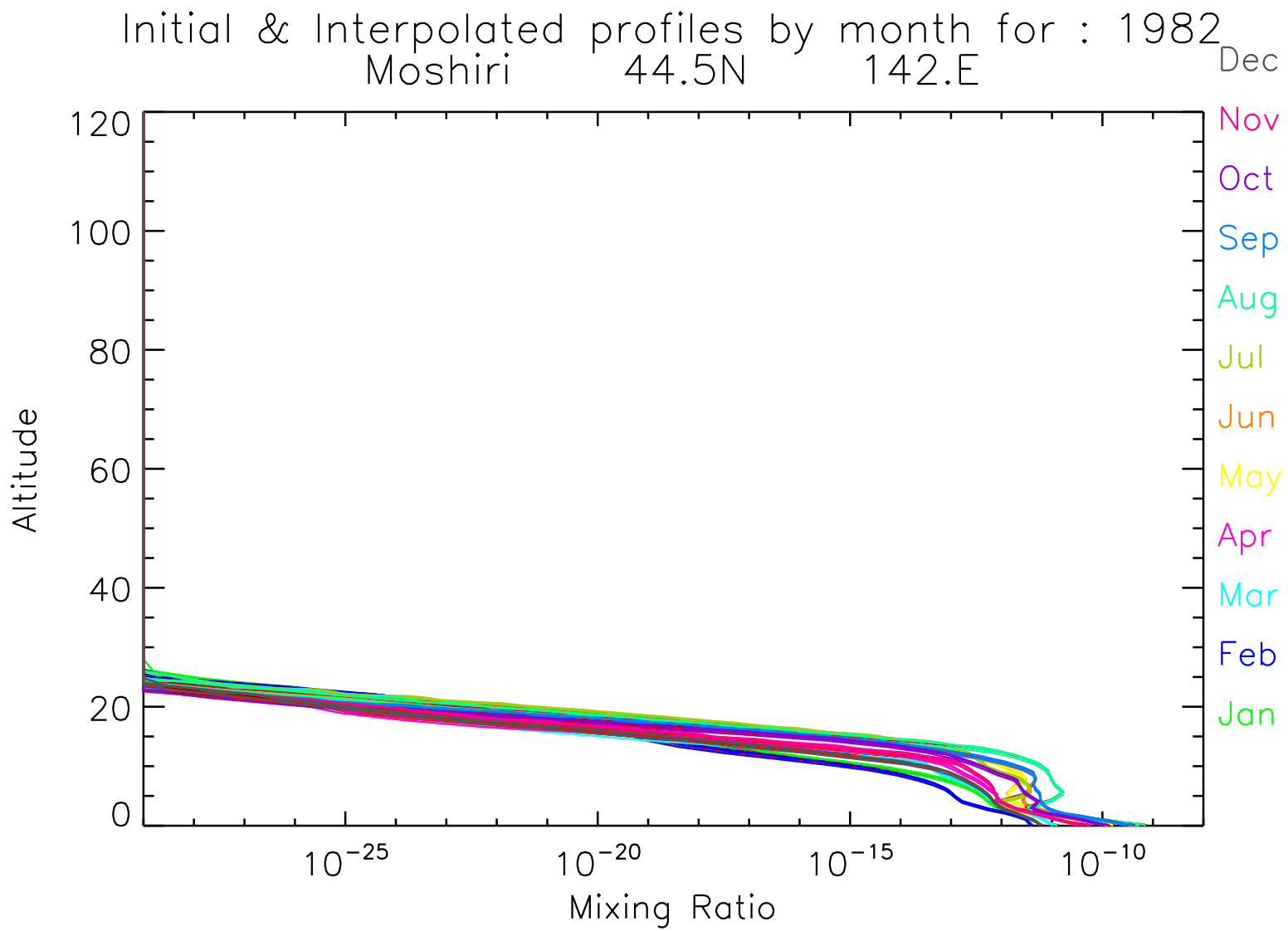
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1982
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
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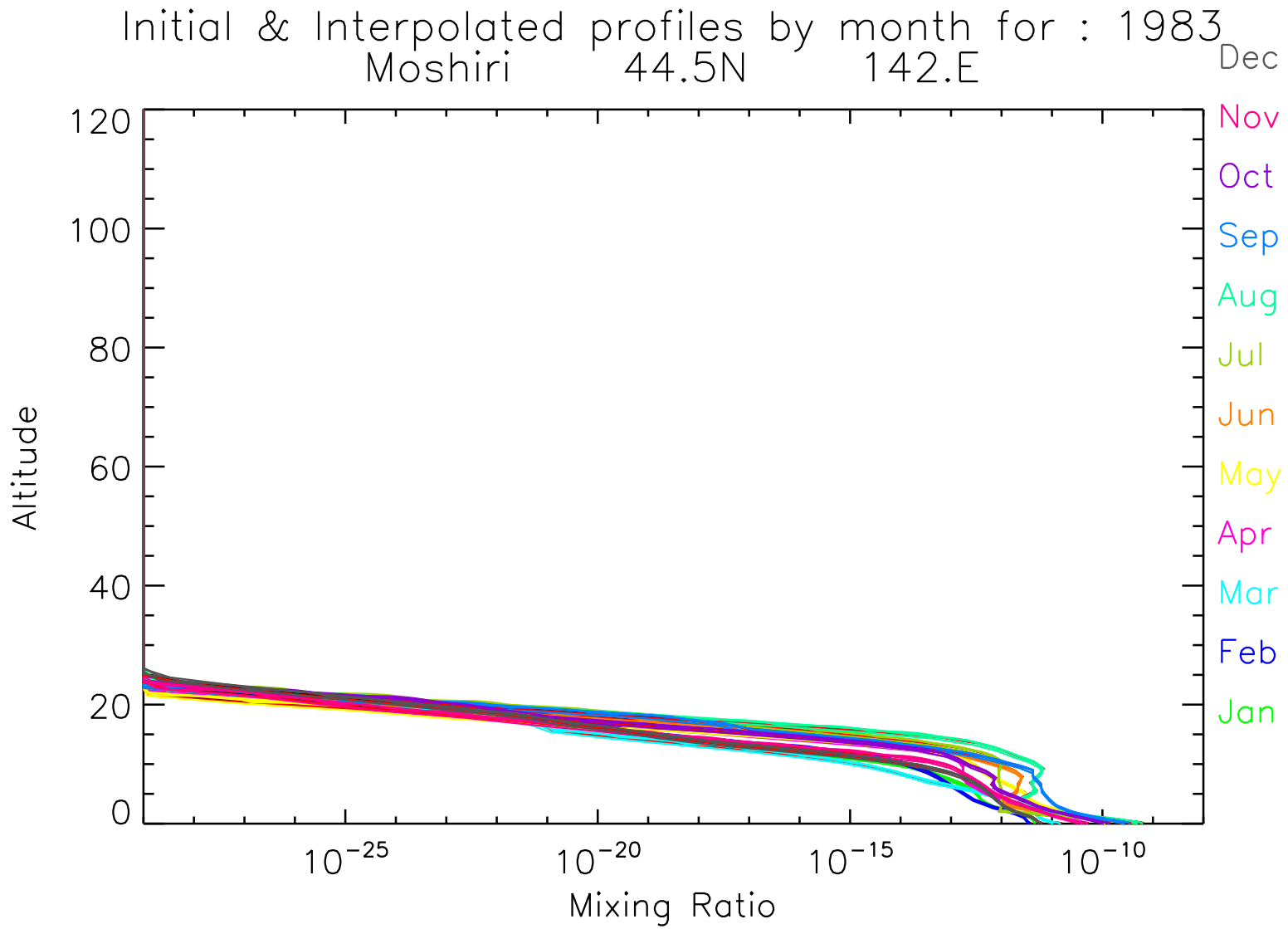
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1983
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
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80
60
40
20
0
Altitude
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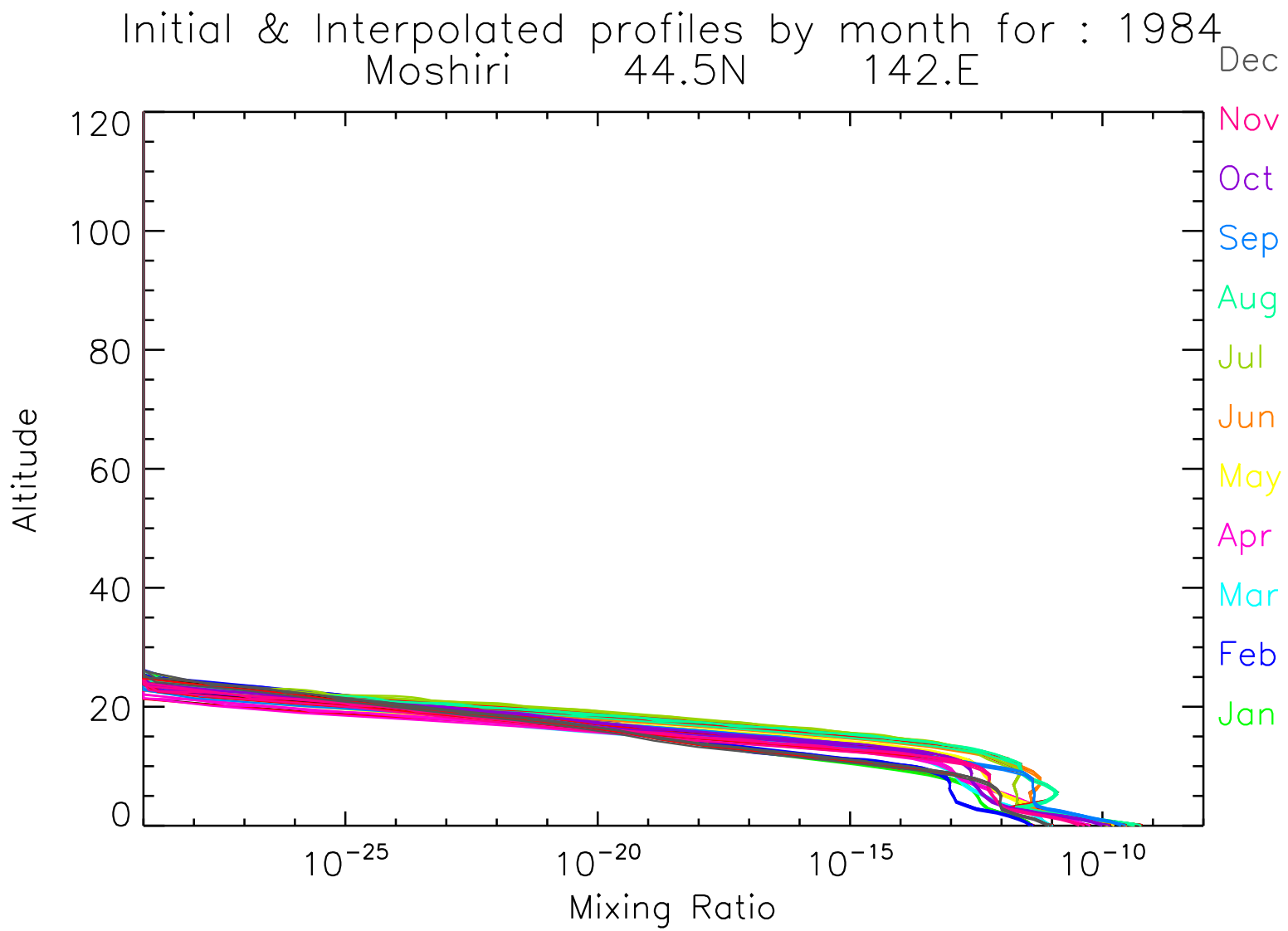
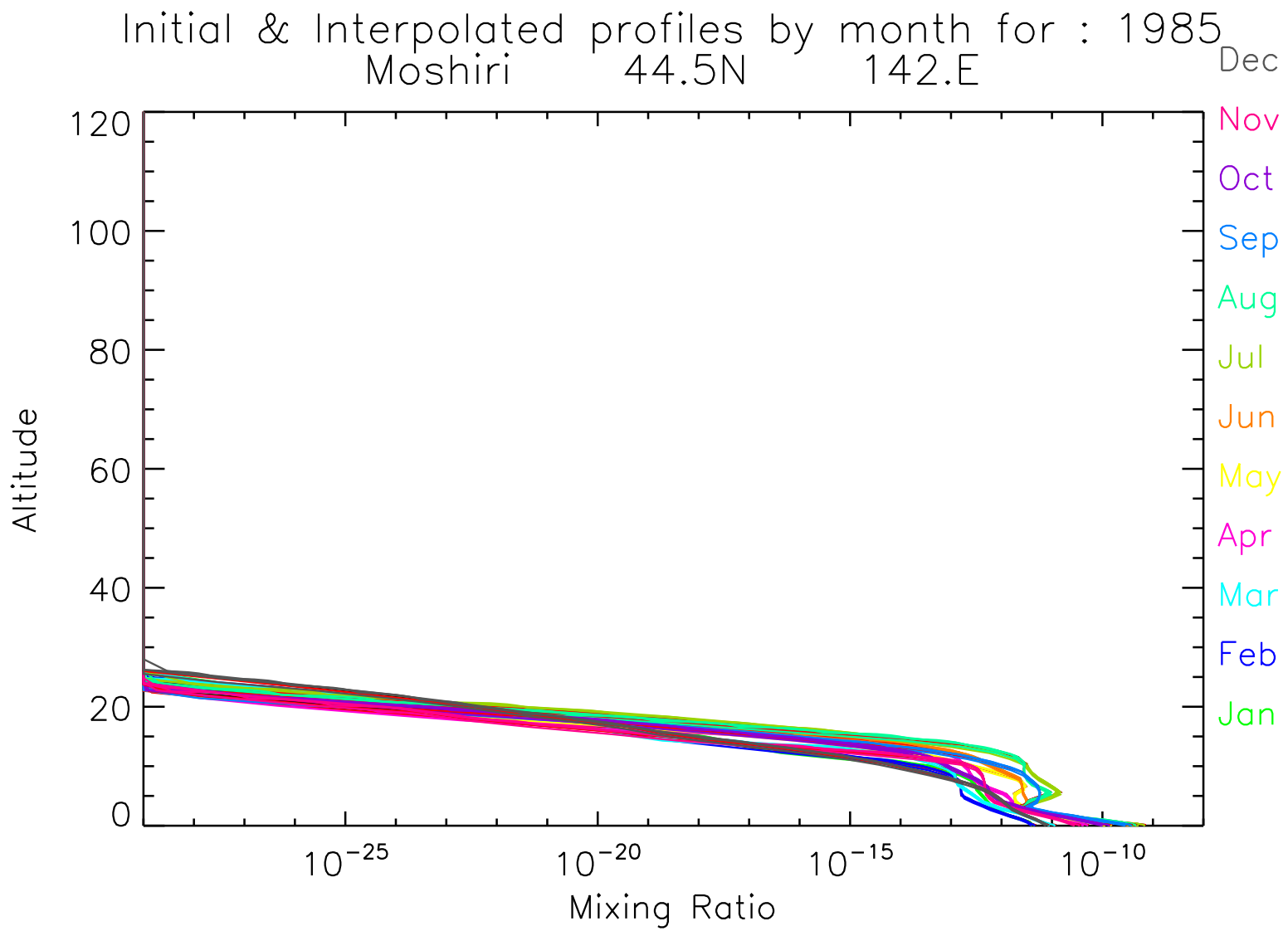
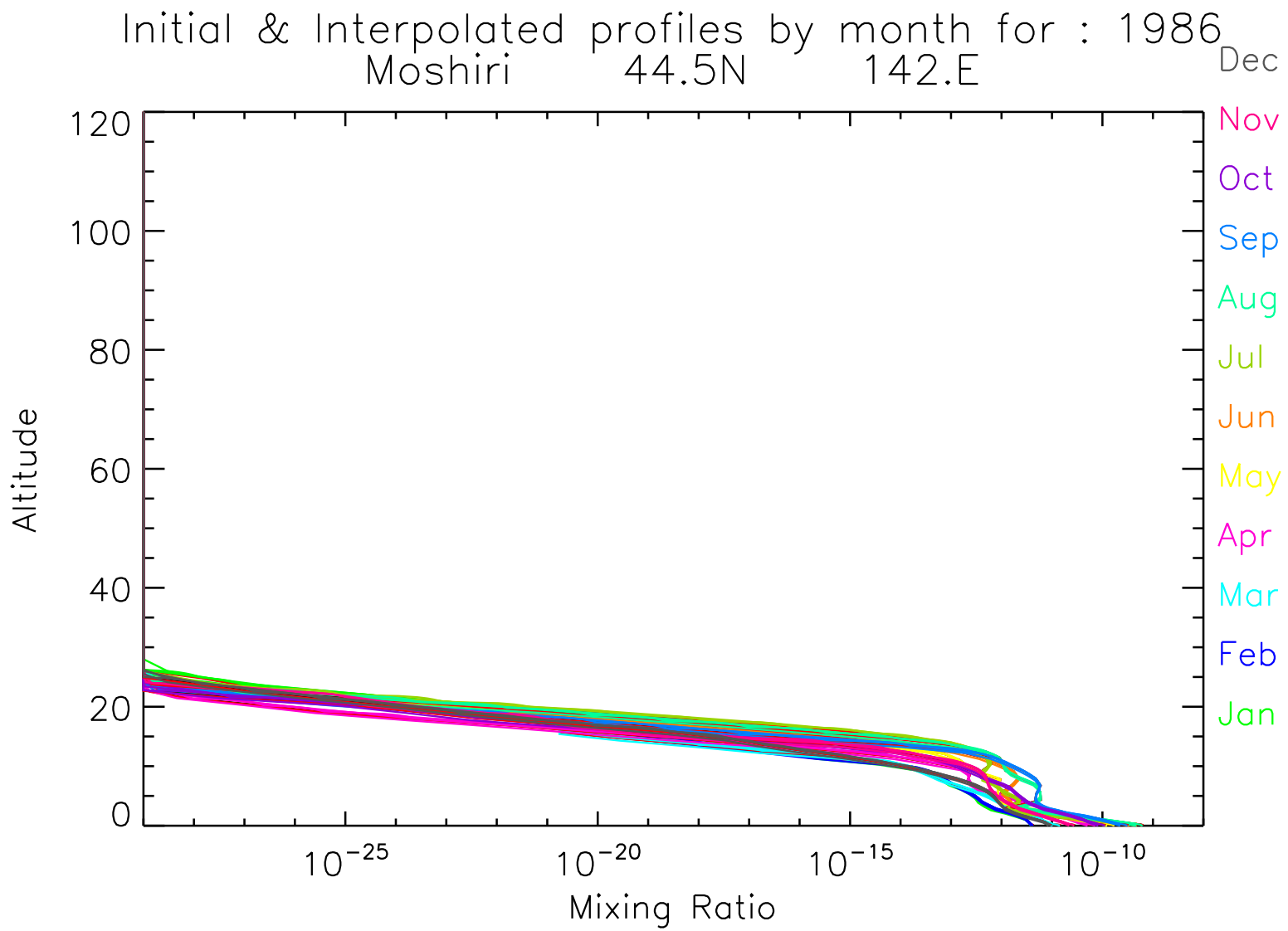
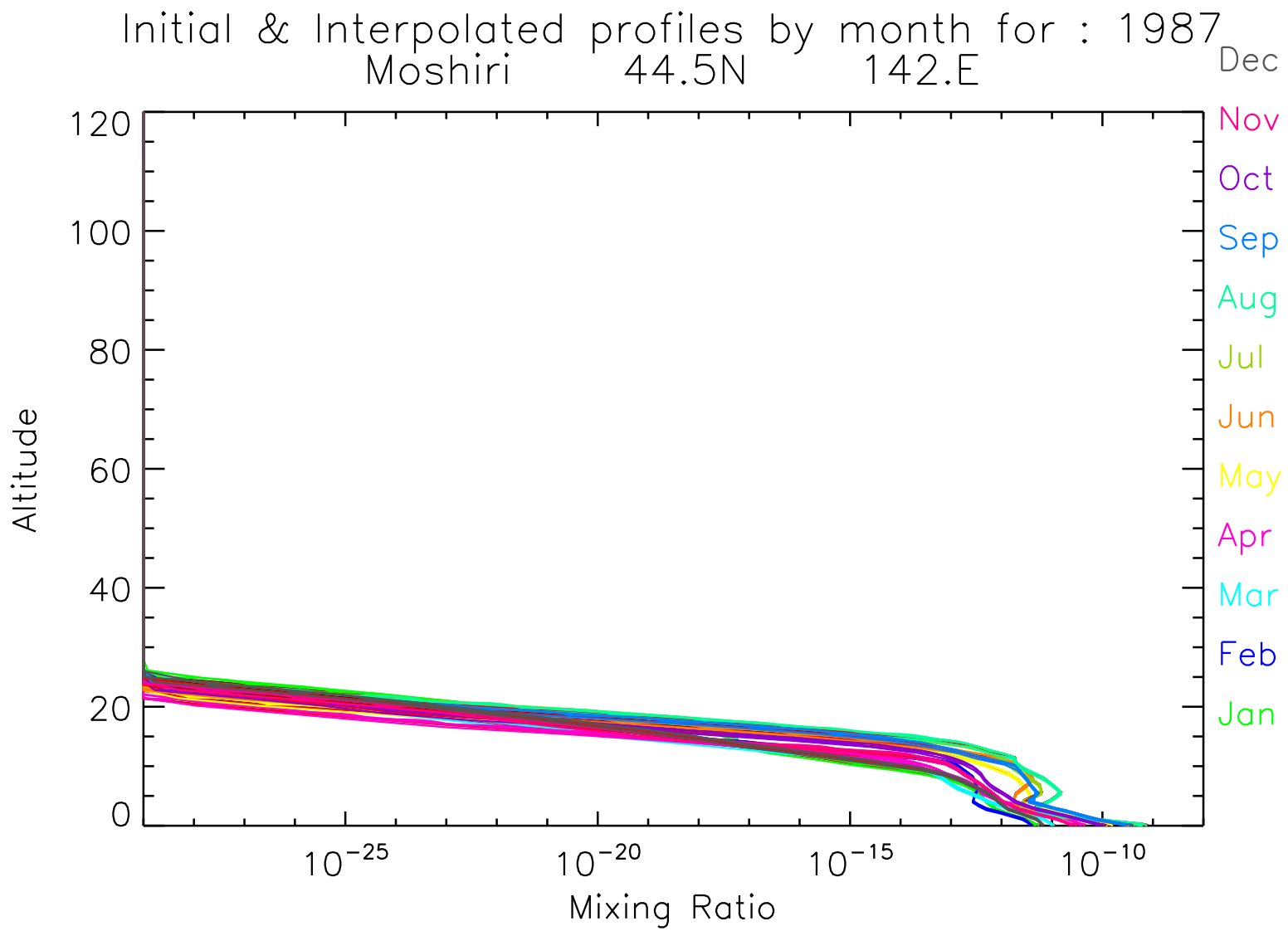
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1984
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1985
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1986
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1987
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
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Apr
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Feb
Jan
120
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80
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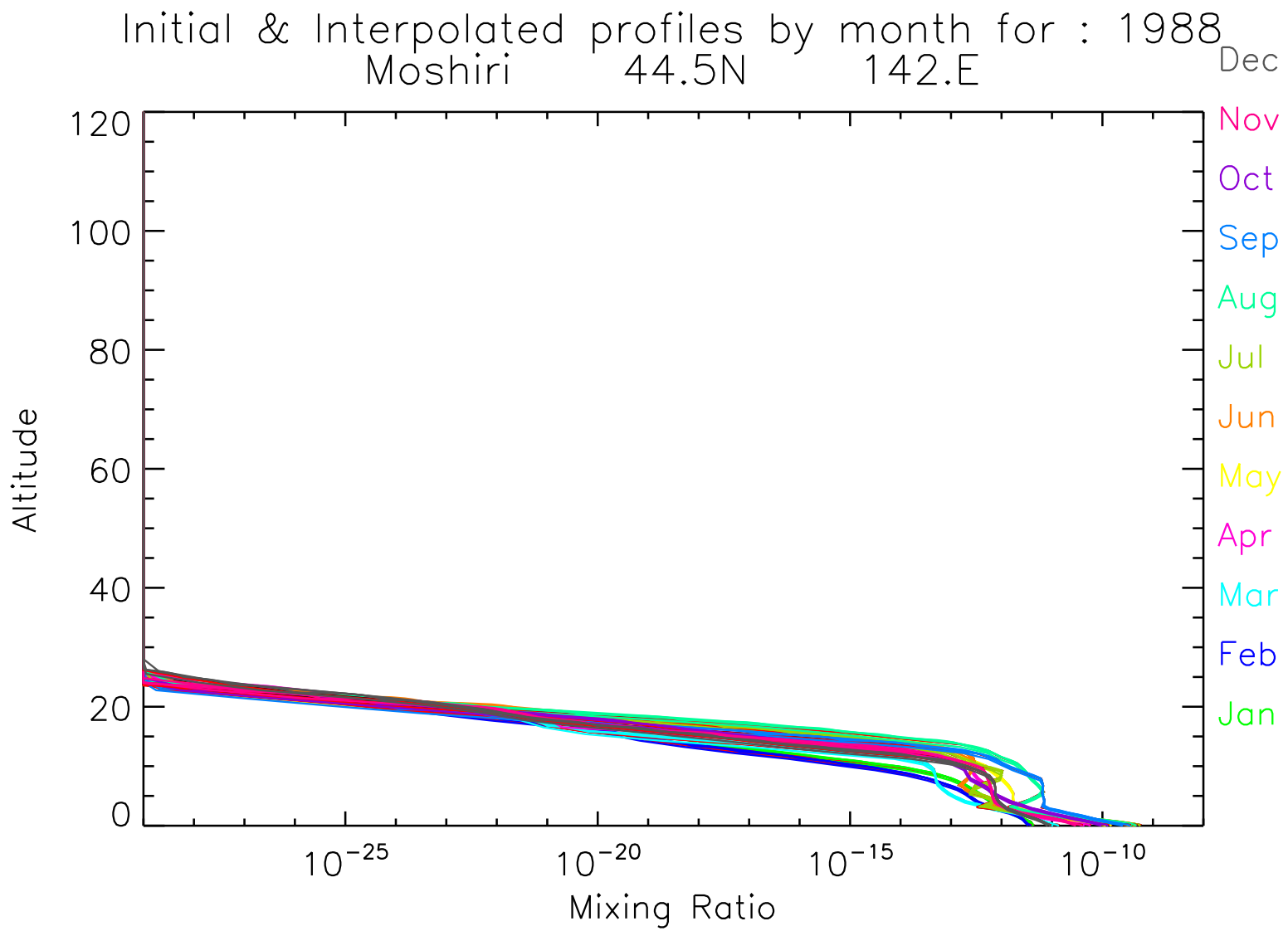
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1988
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
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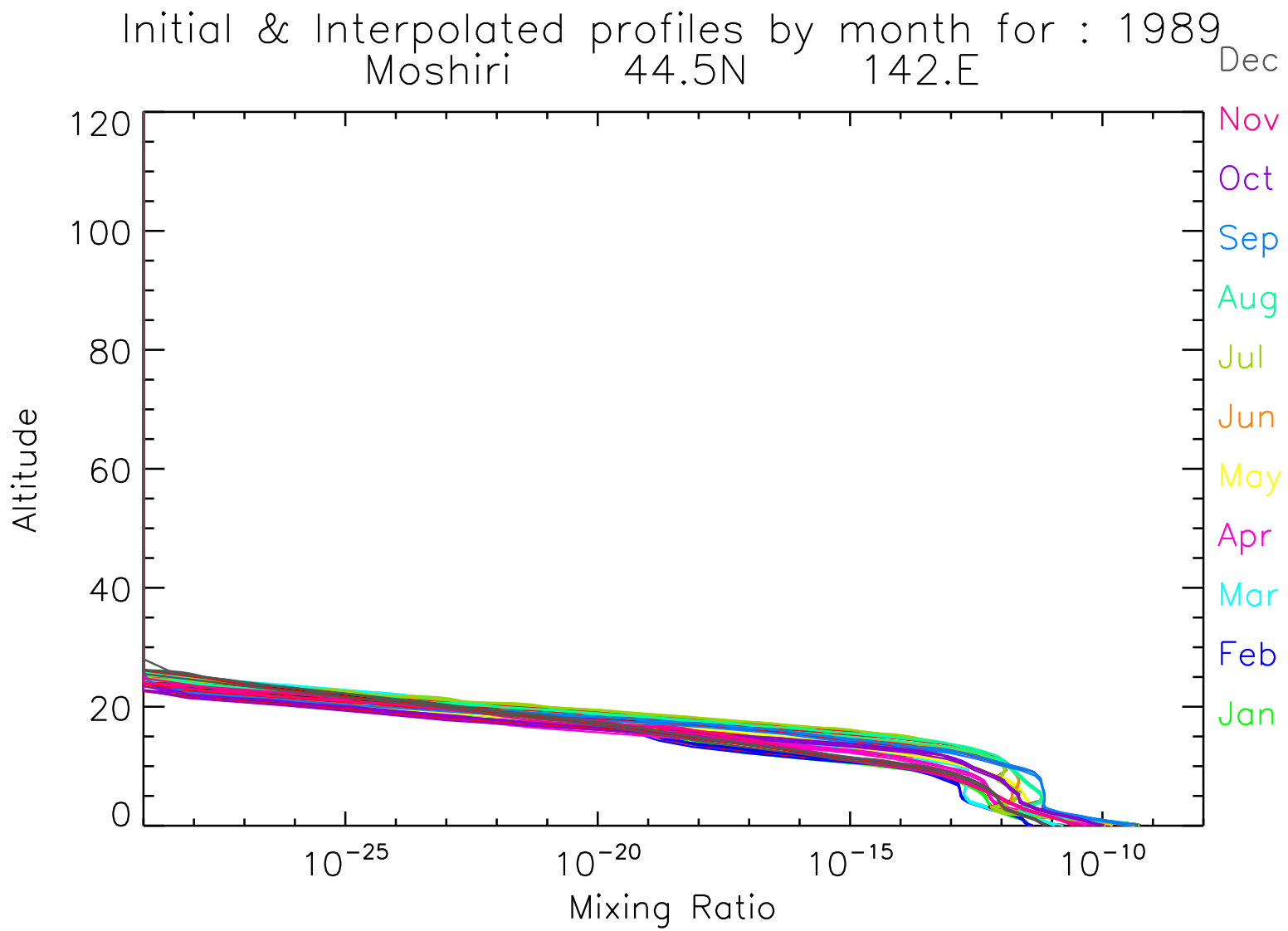
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1989
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
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Jun
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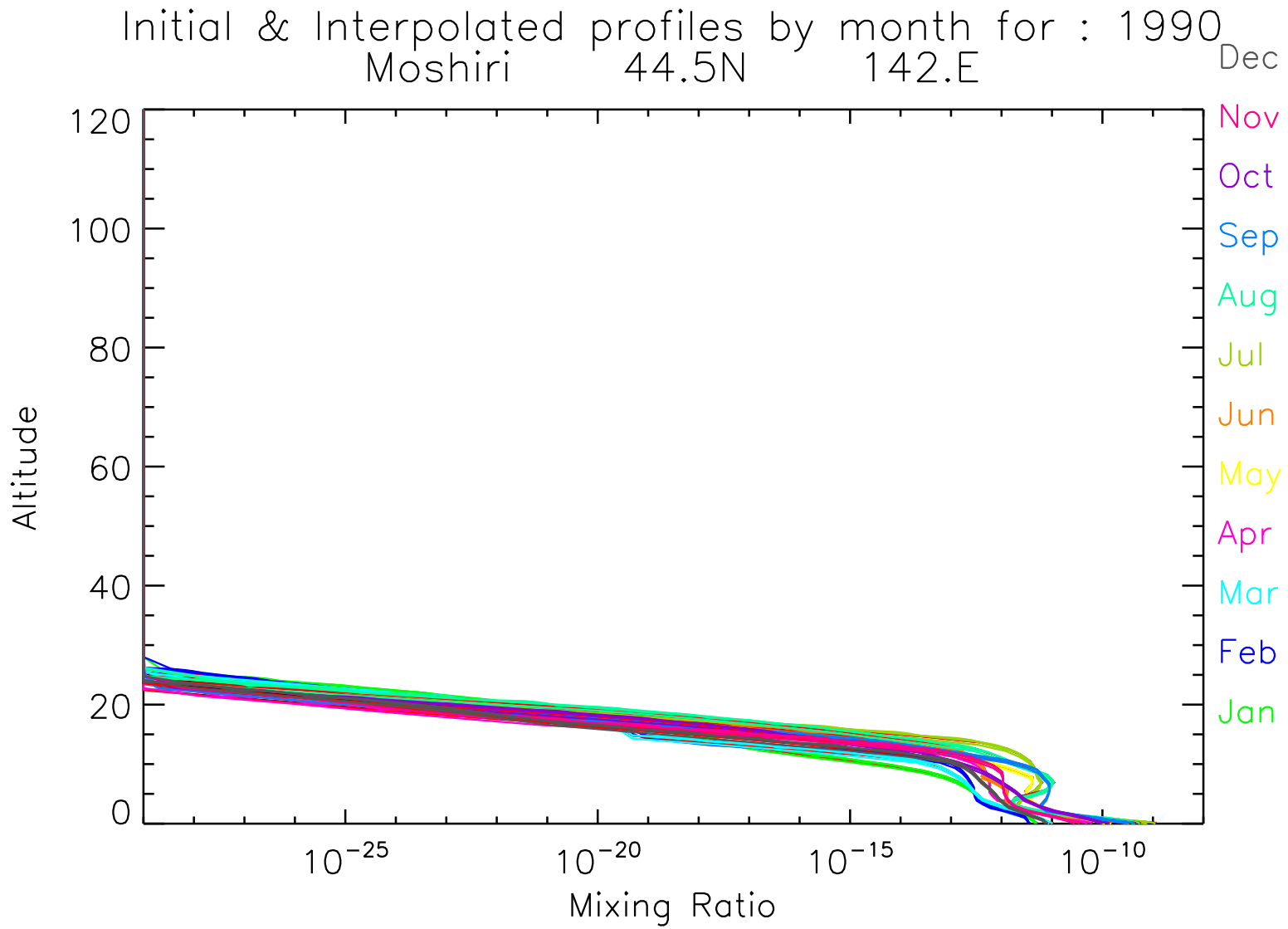
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1990
Moshiri 44.5N 142.E
Dec
Nov
Oct
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Feb
Jan
120
100
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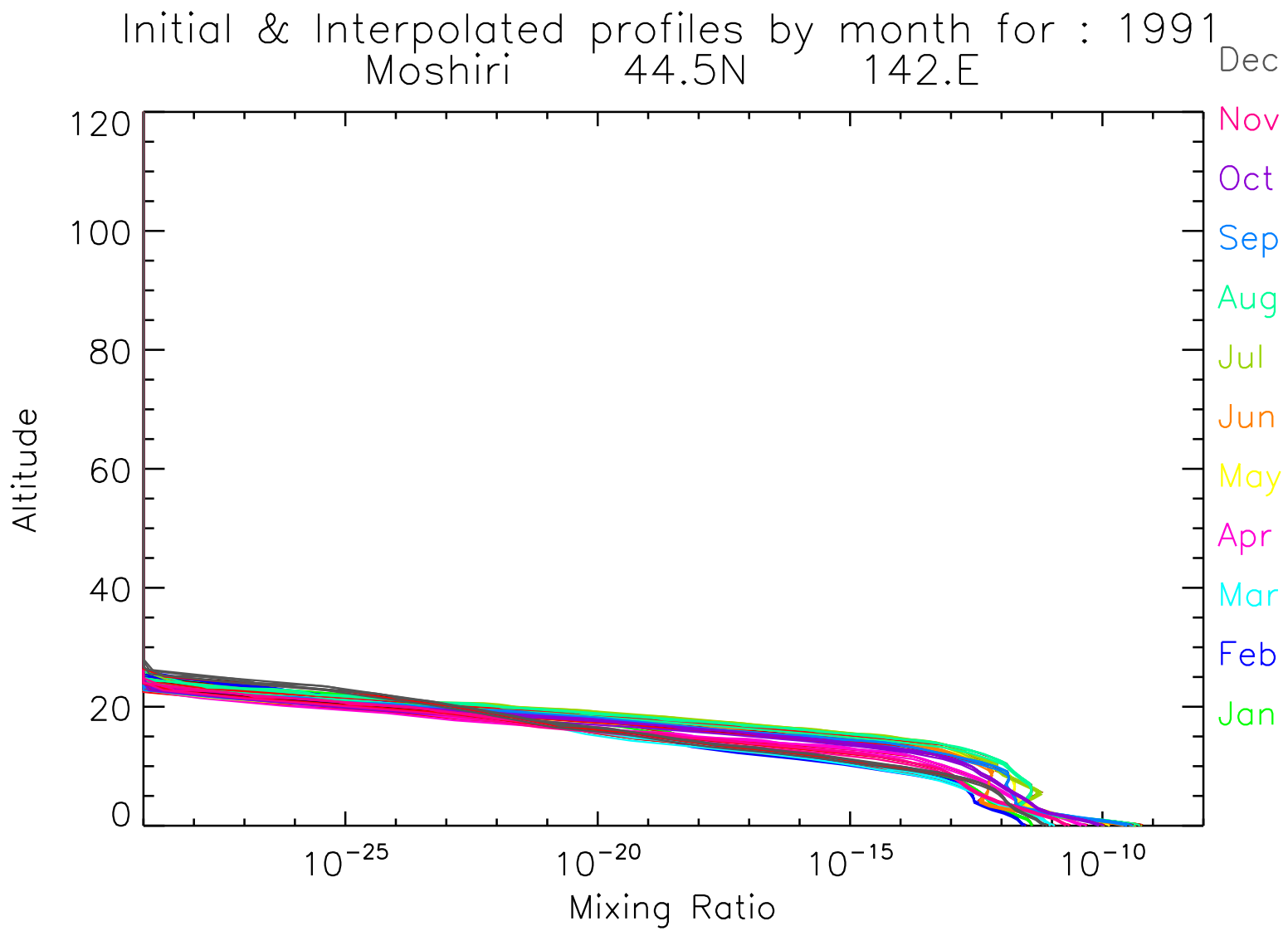
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1991
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
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Feb
Jan
120
100
80
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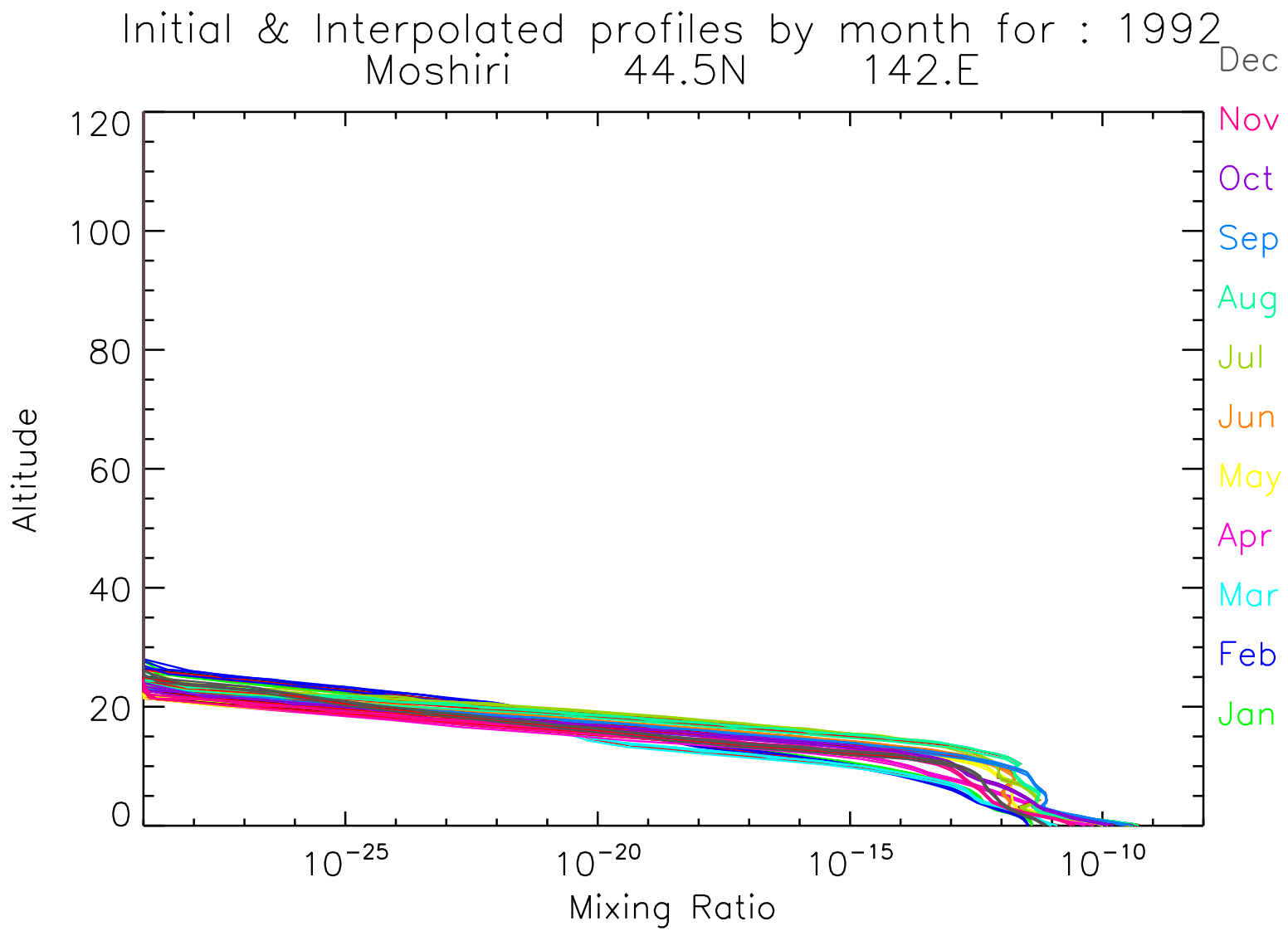
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1992
Moshiri 44.5N 142.E
Dec
Nov
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Feb
Jan
120
100
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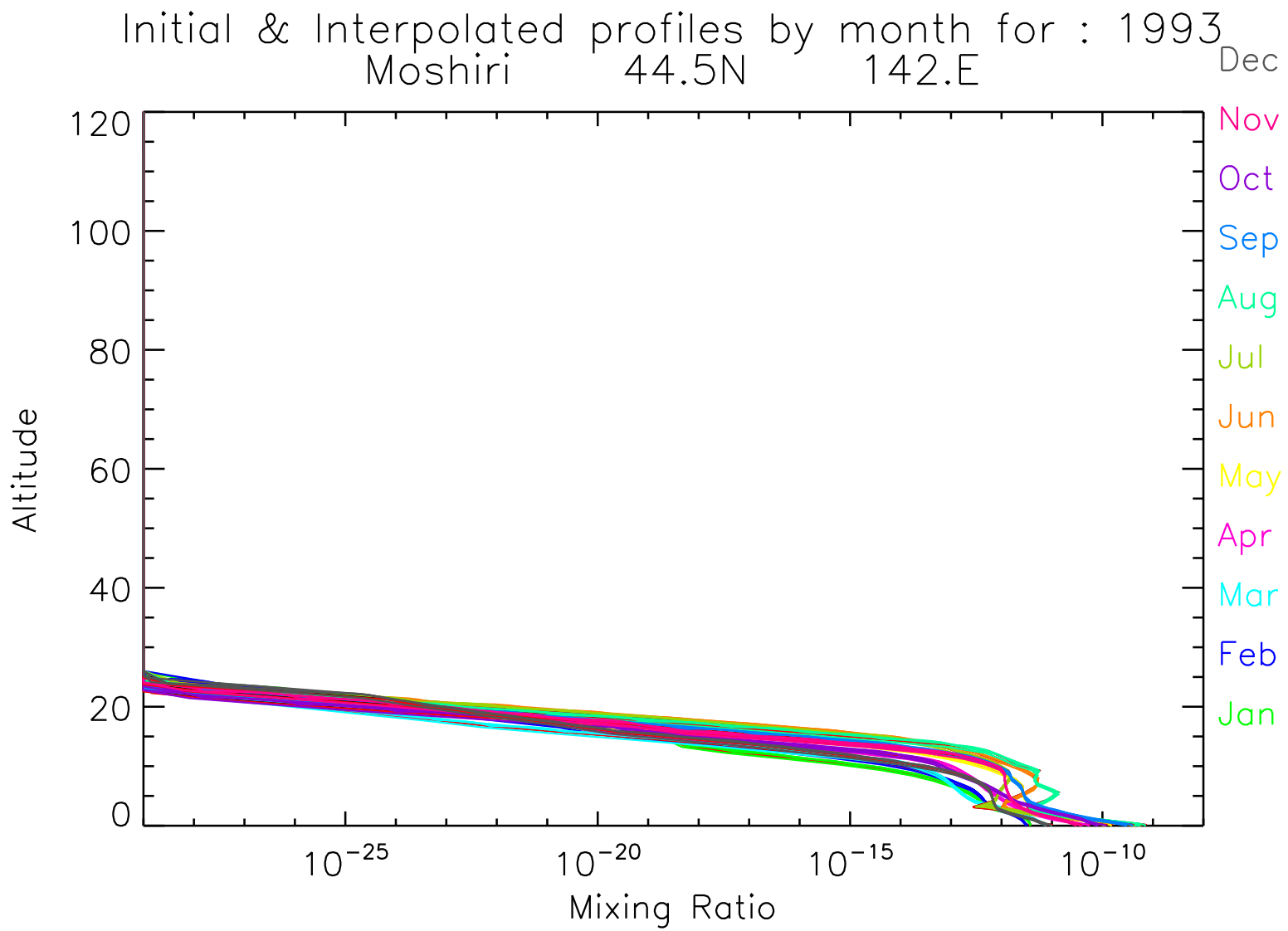
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1993
Moshiri 44.5N 142.E
Dec
Nov
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Aug
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May
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Jan
120
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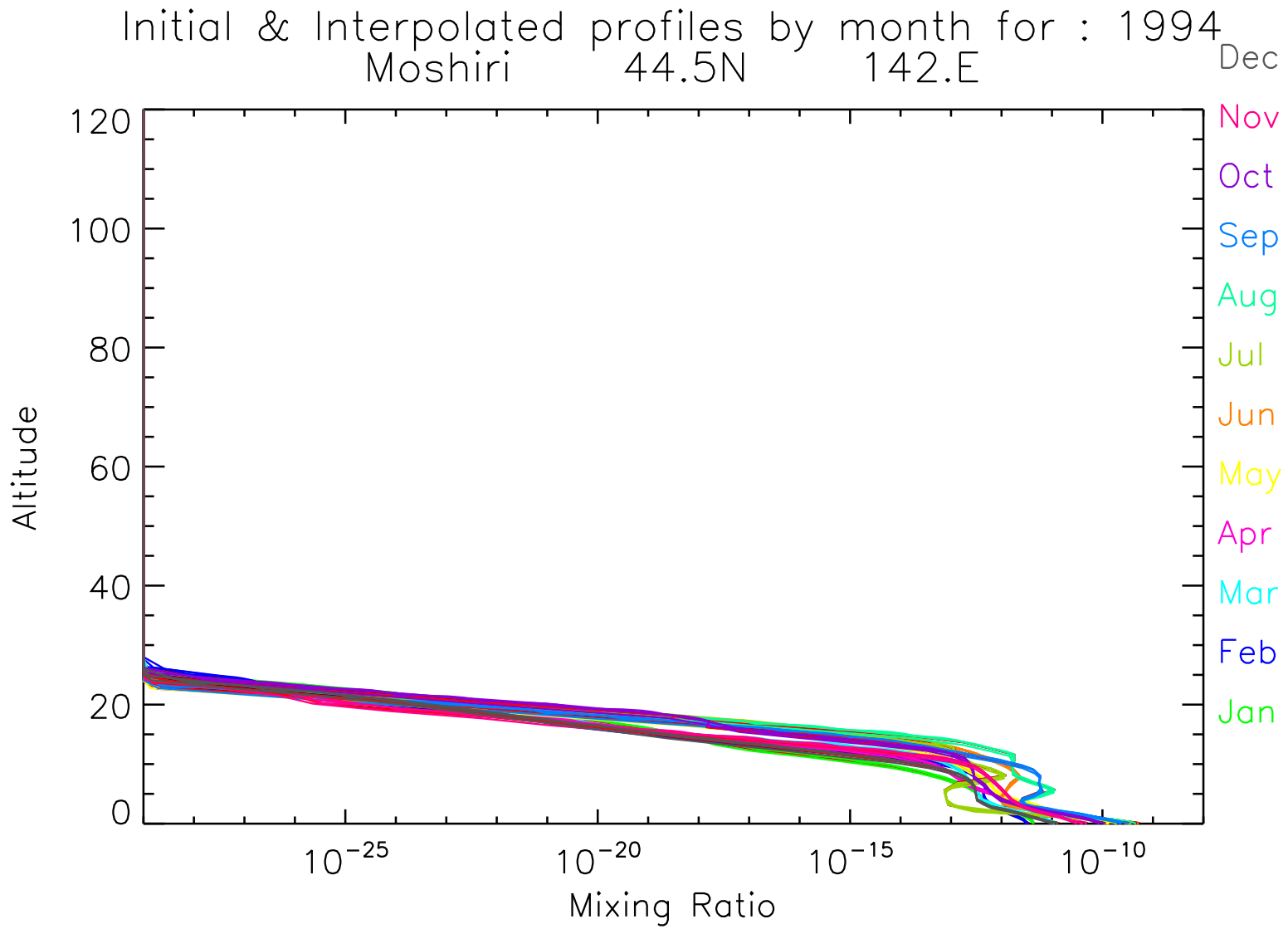
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1994
Moshiri 44.5N 142.E
Dec
Nov
Oct
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Aug
Jul
Jun
May
Apr
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Feb
Jan
120
100
80
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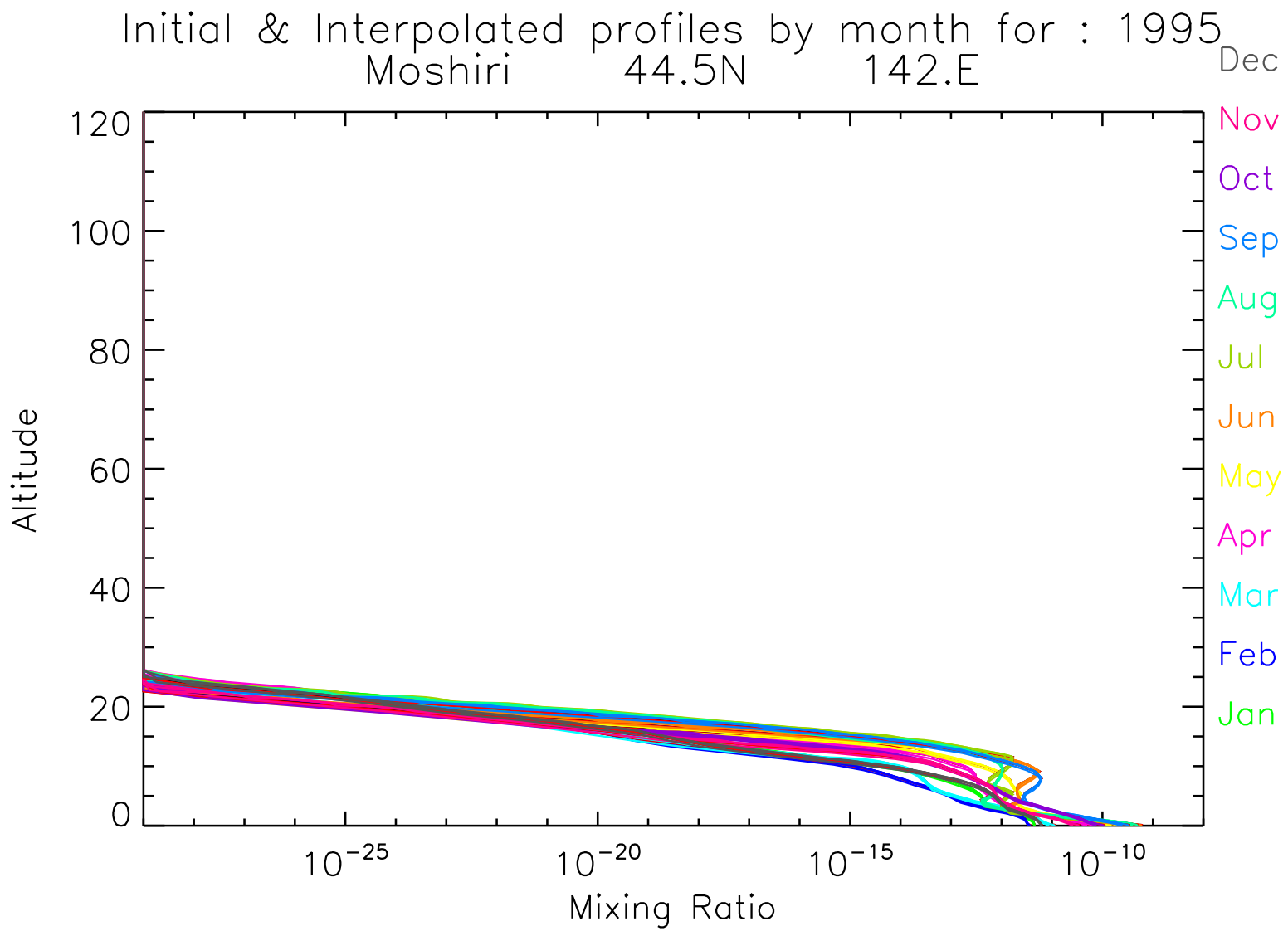
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1995
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
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Jun
May
Apr
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Feb
Jan
120
100
80
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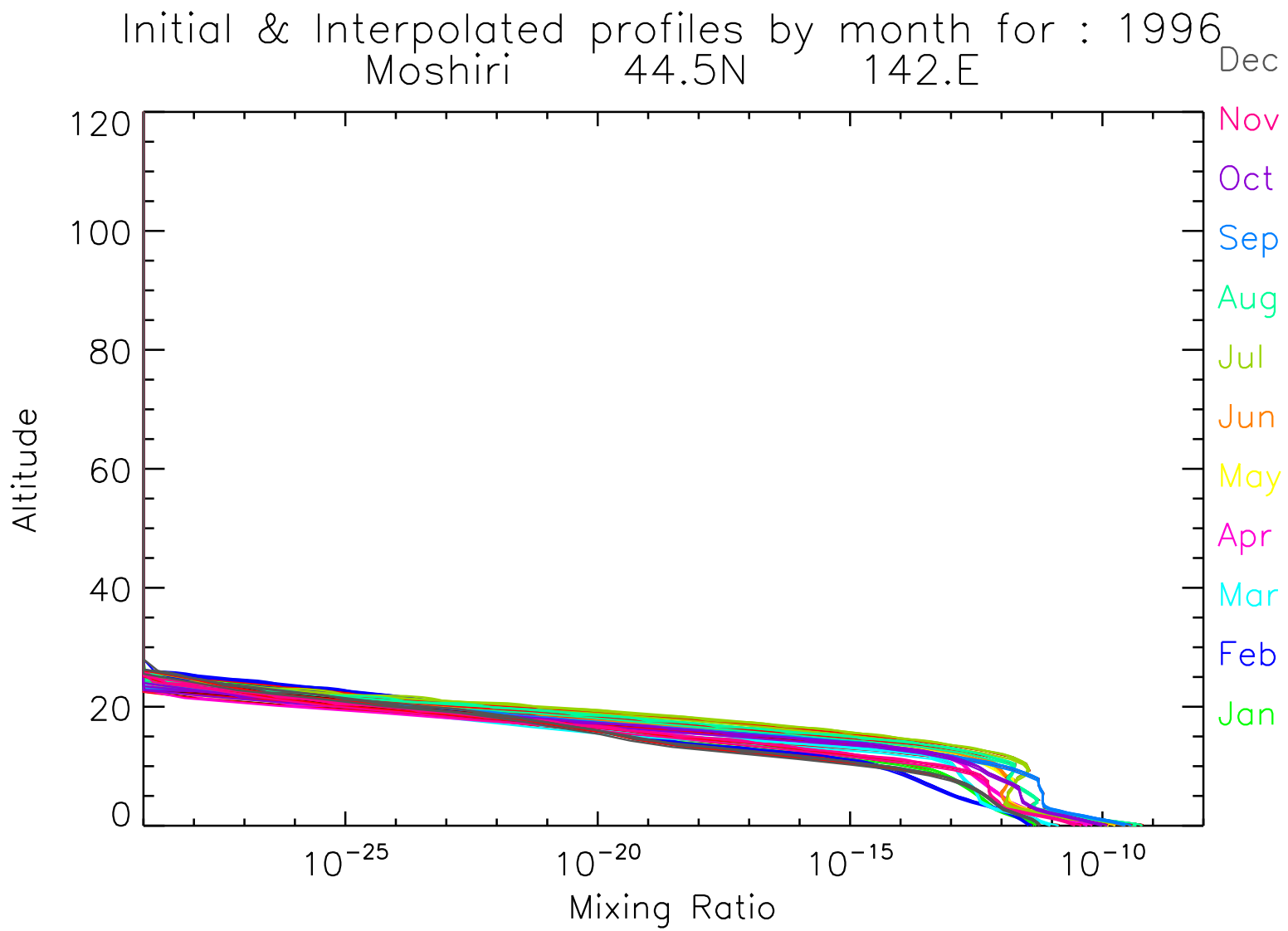
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1996
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
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Jun
May
Apr
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Feb
Jan
120
100
80
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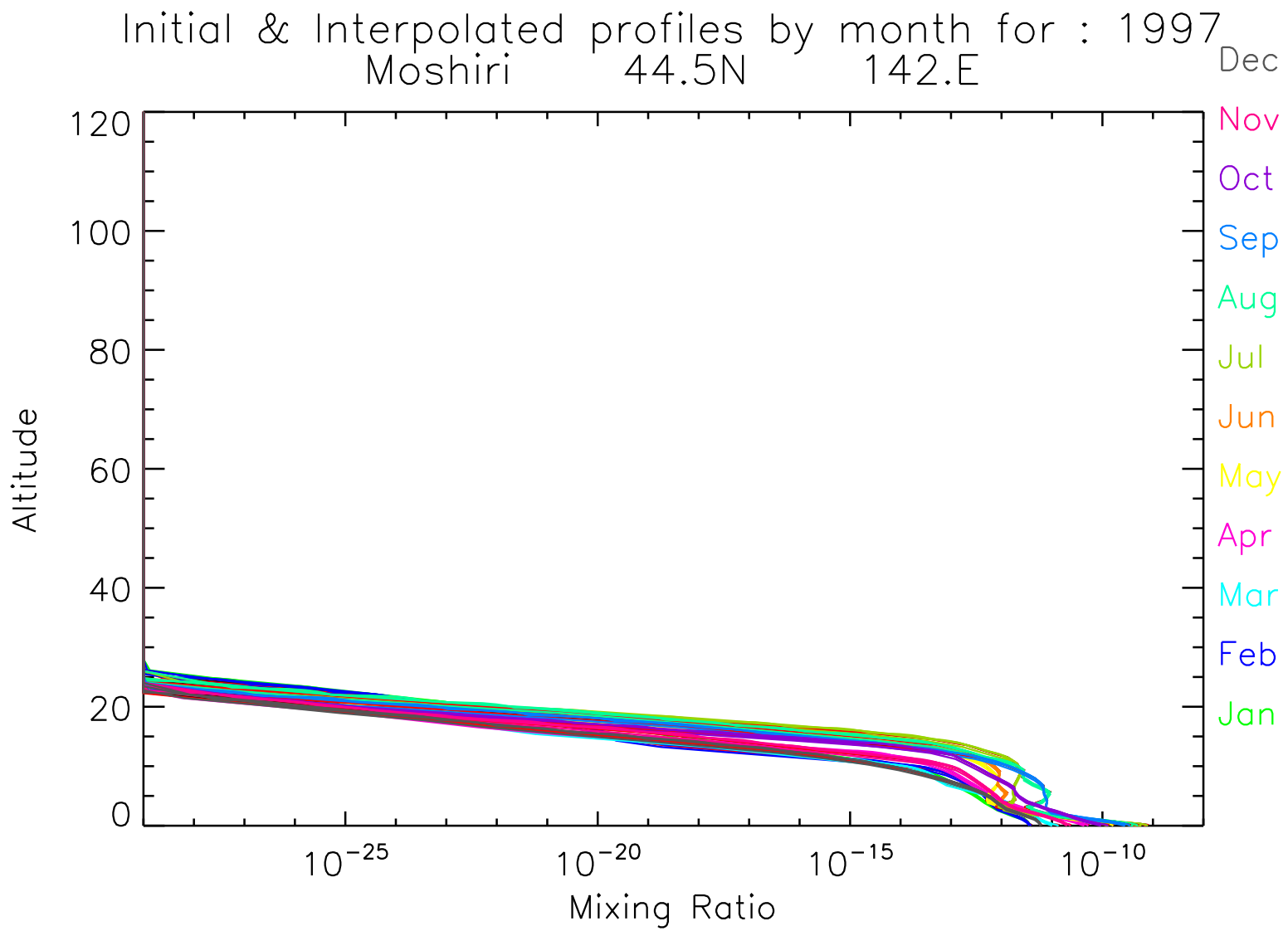
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1997
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
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120
100
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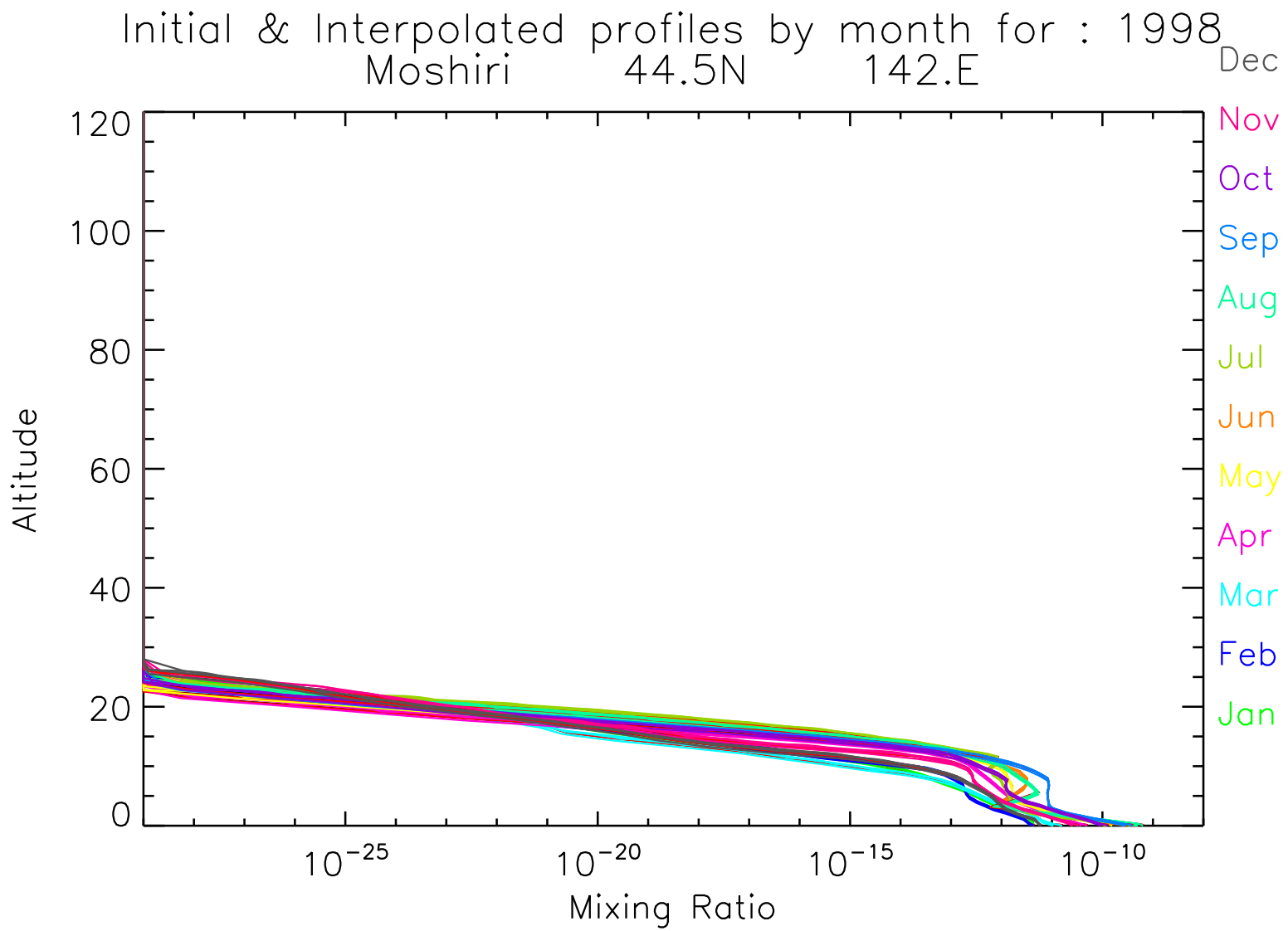
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1998
Moshiri 44.5N 142.E
Dec
Nov
Oct
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Jun
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Feb
Jan
120
100
80
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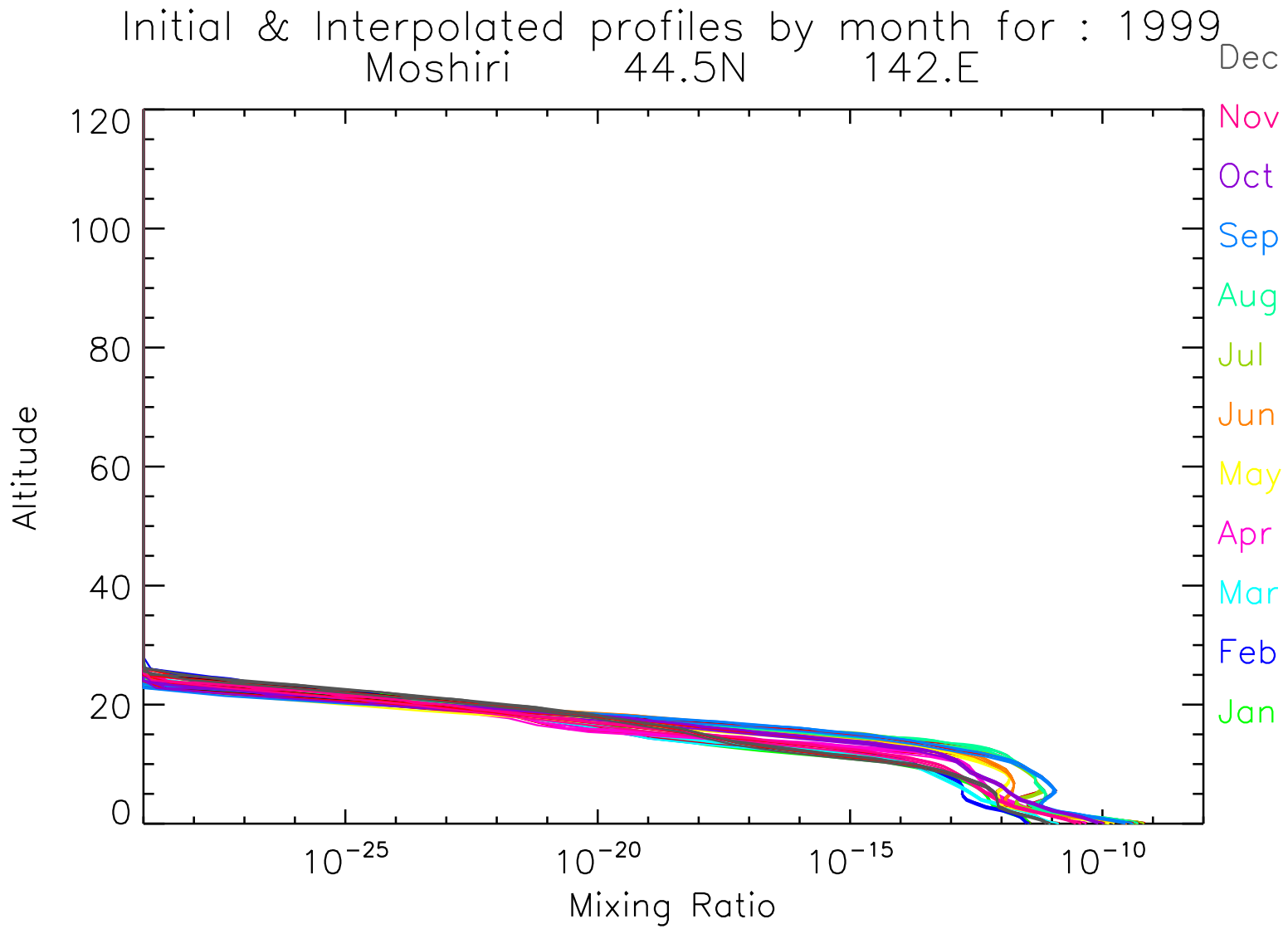
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 1999
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
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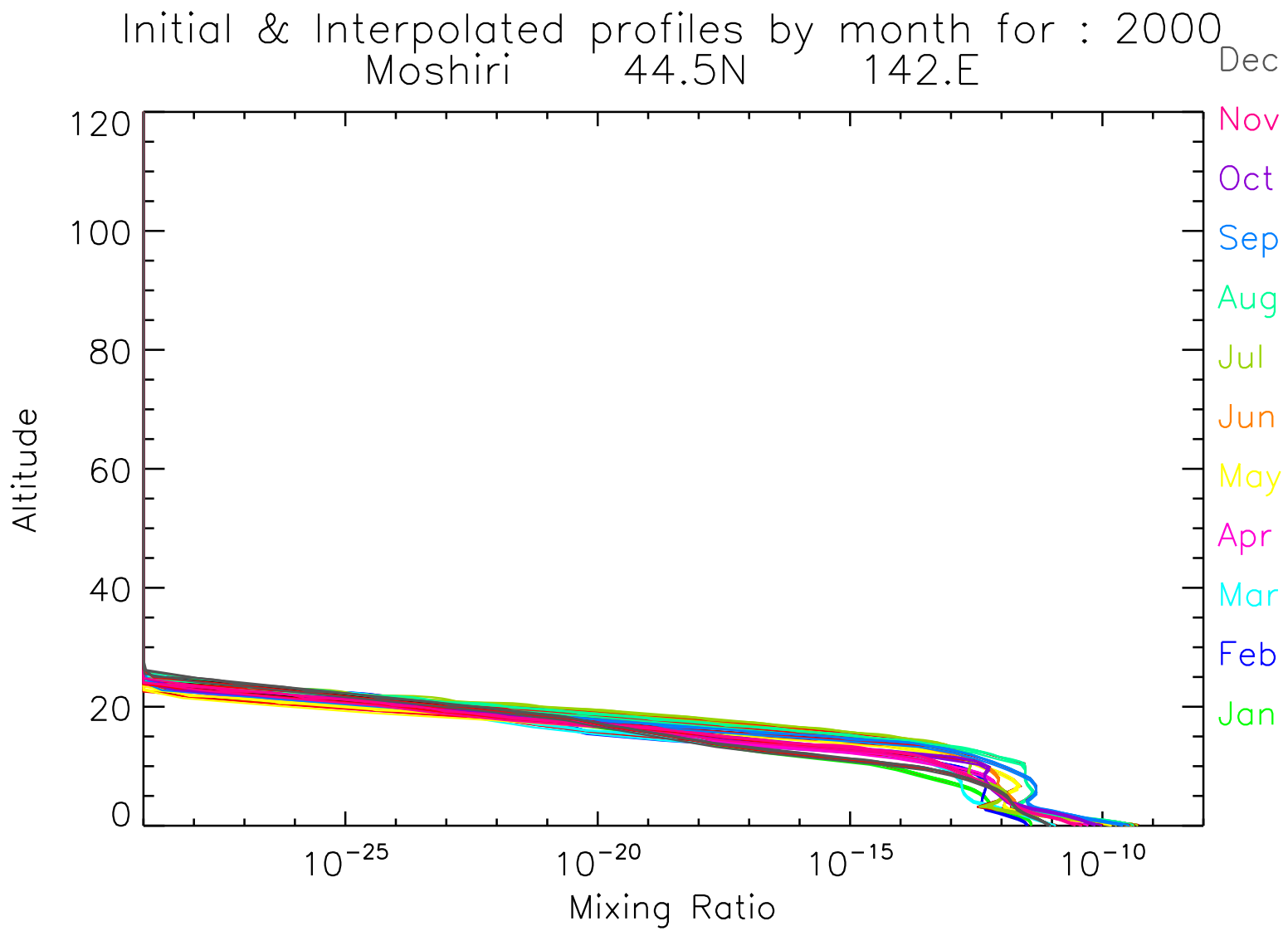
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 2000
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
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Jun
May
Apr
Mar
Feb
Jan
120
100
80
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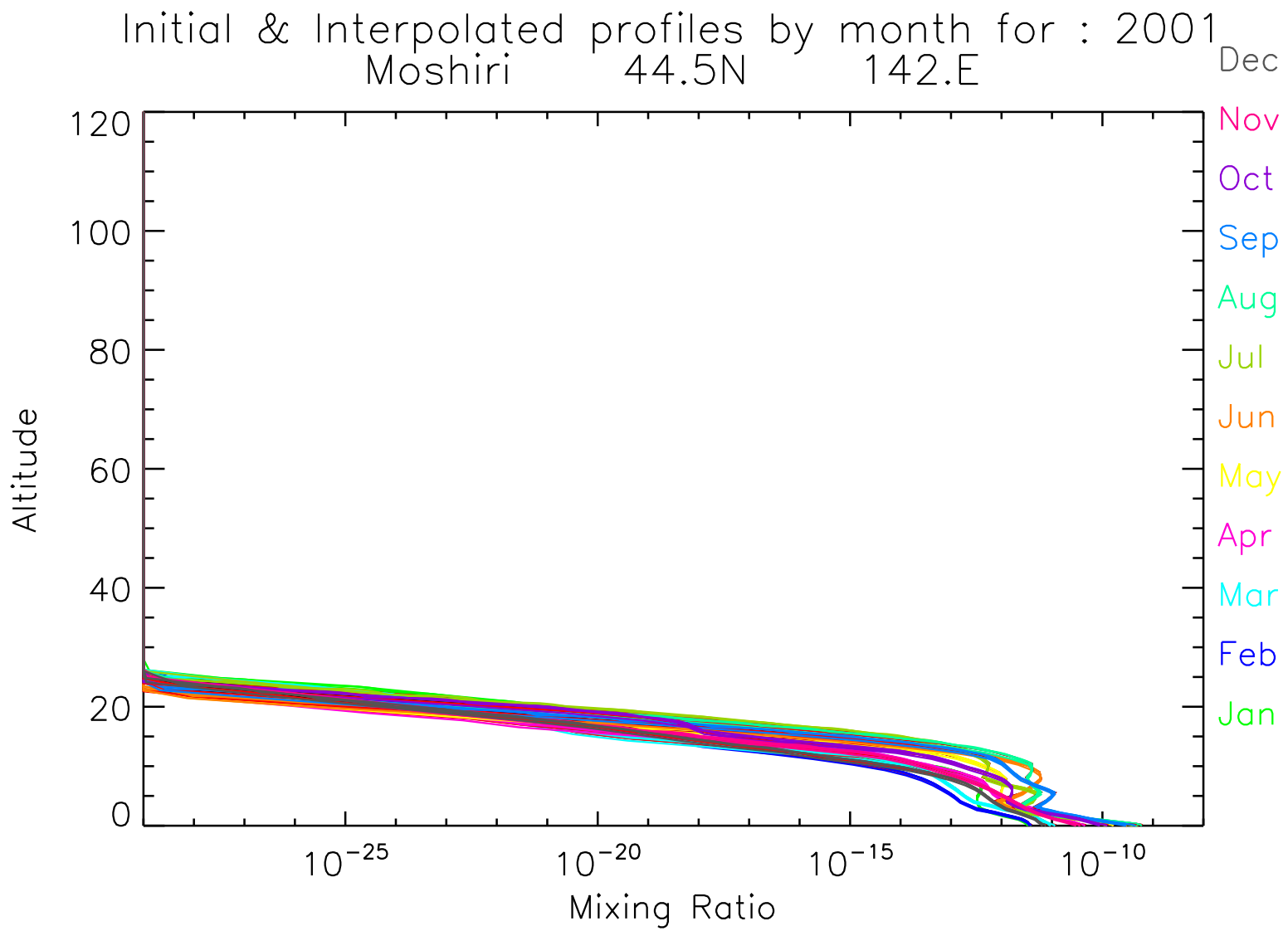
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 2001
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
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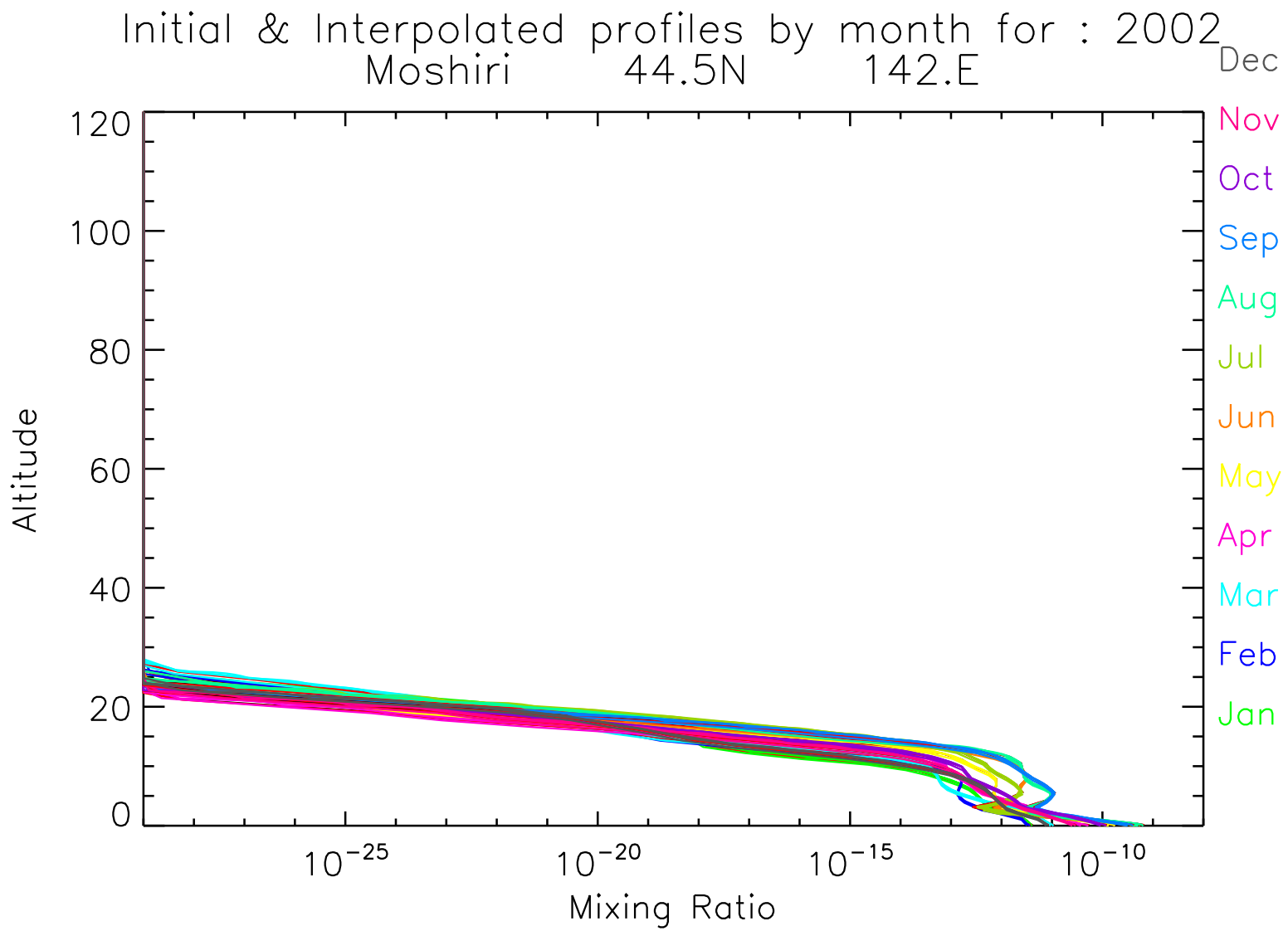
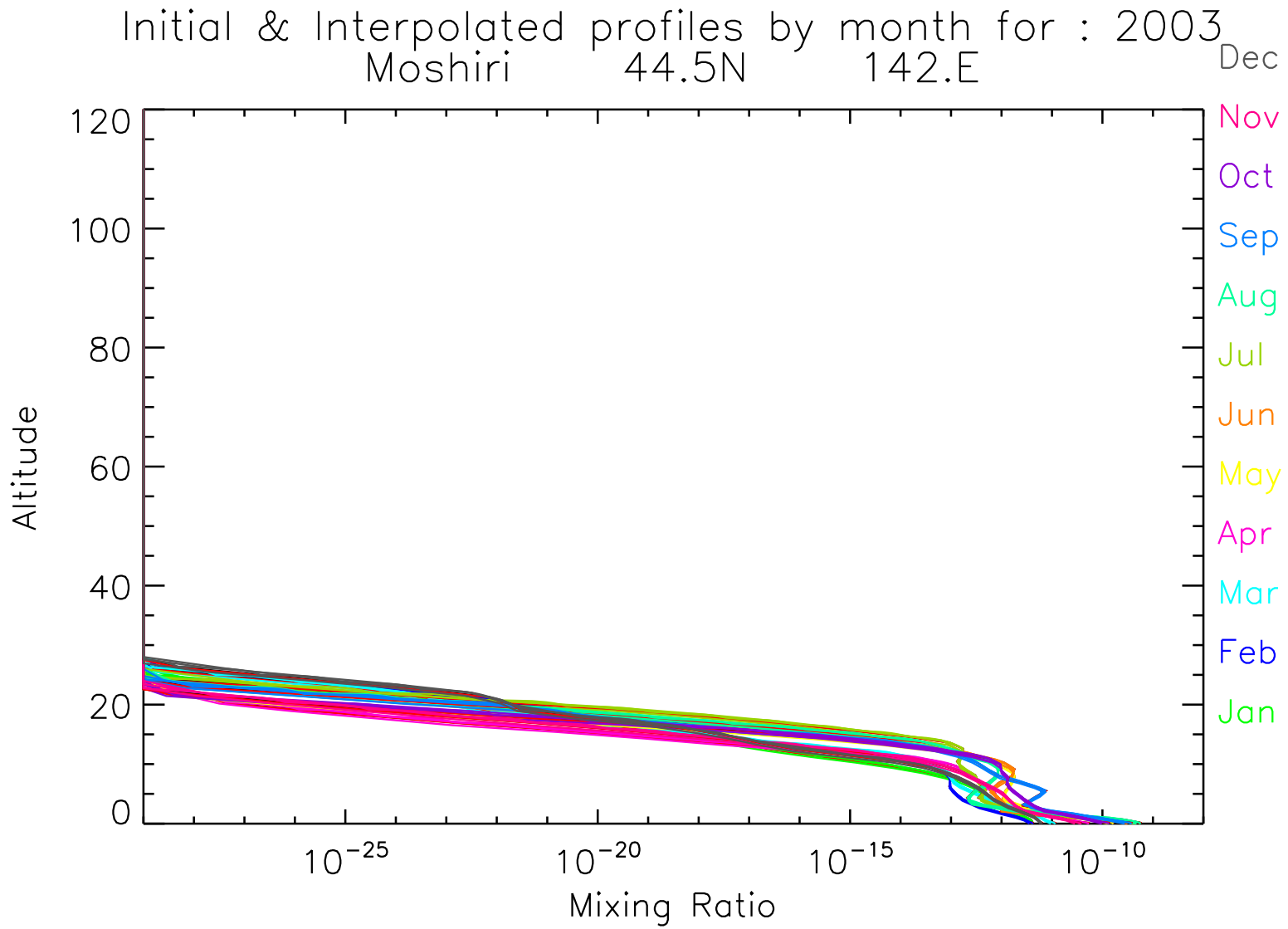
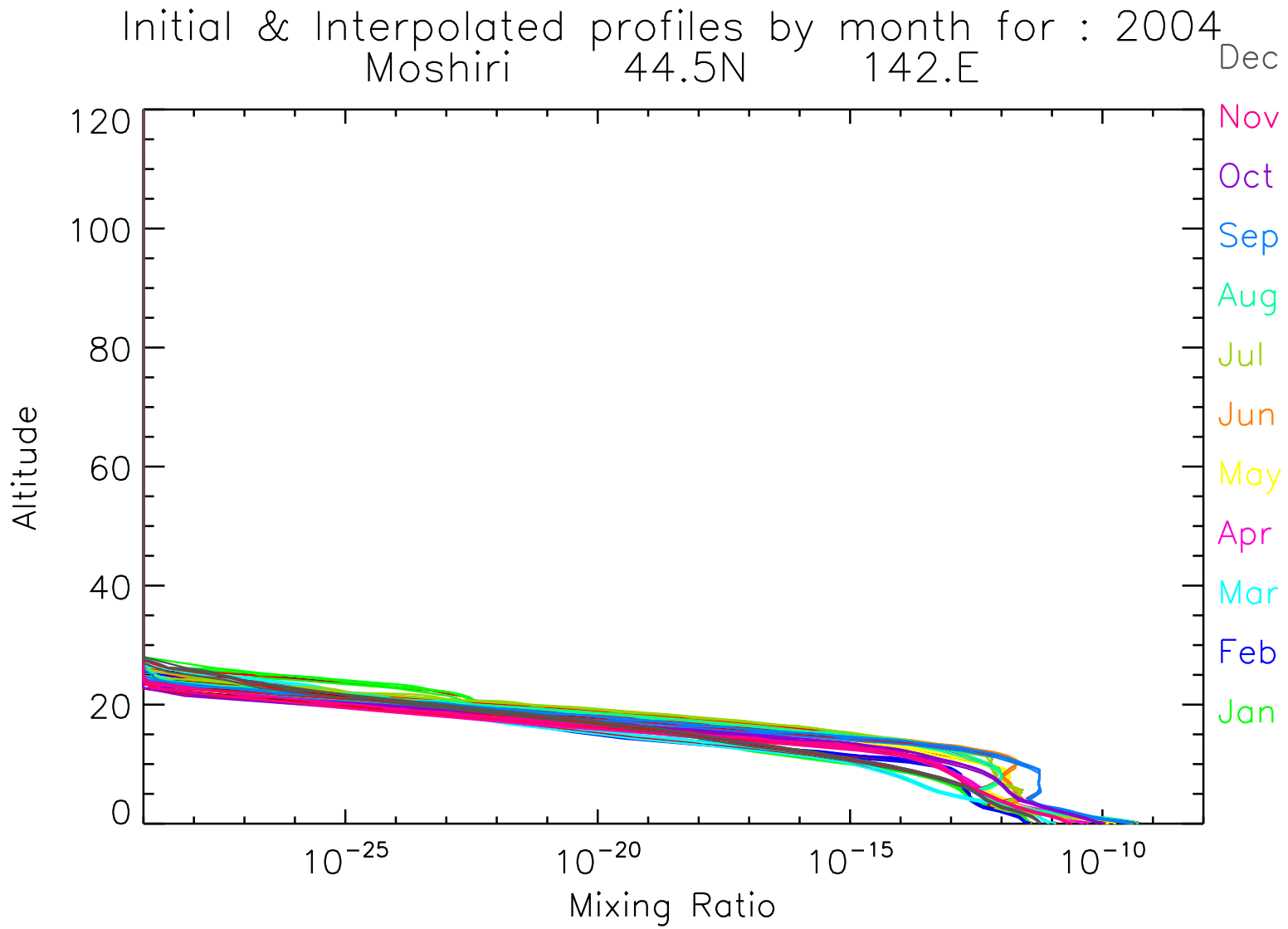
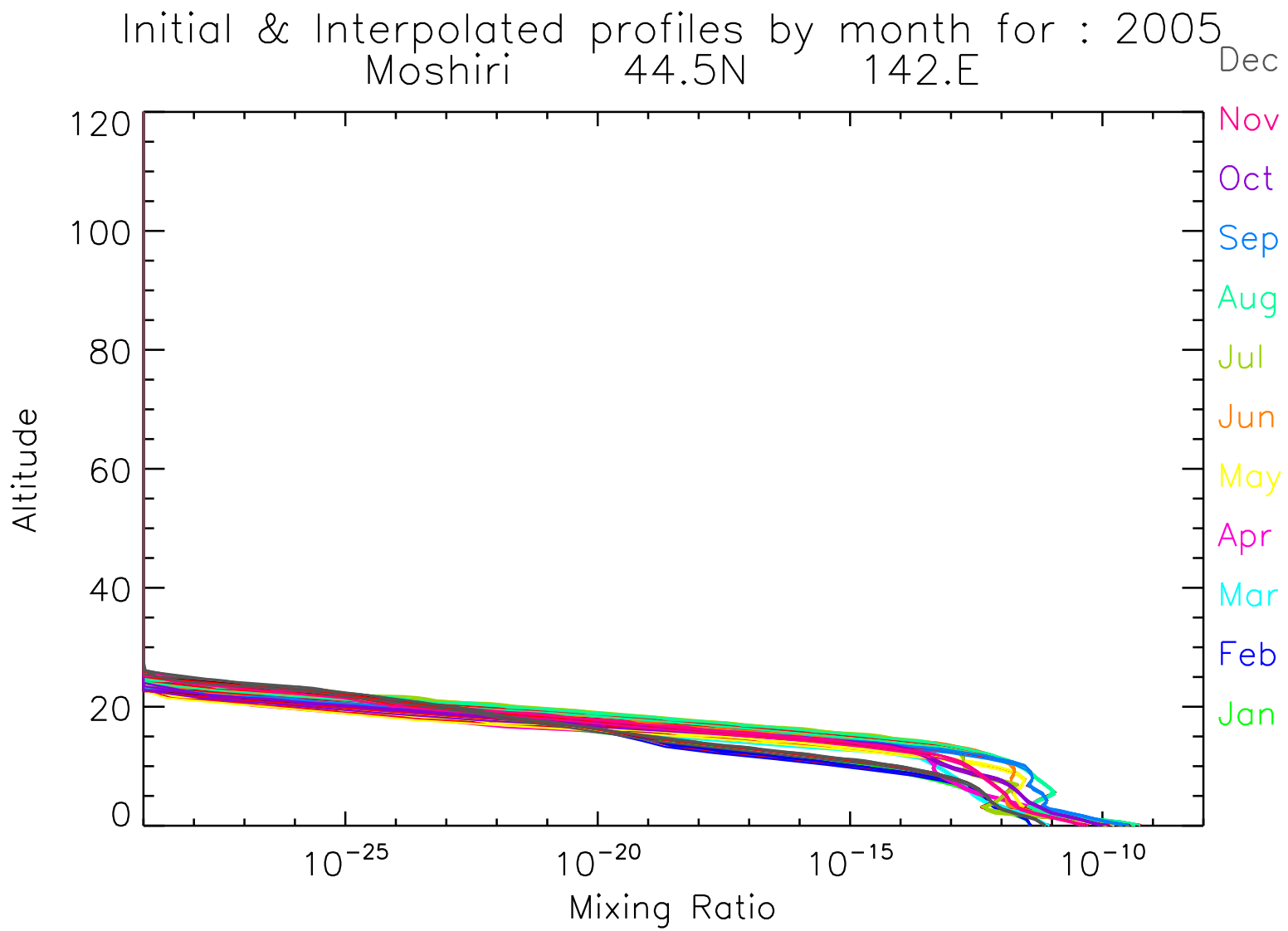
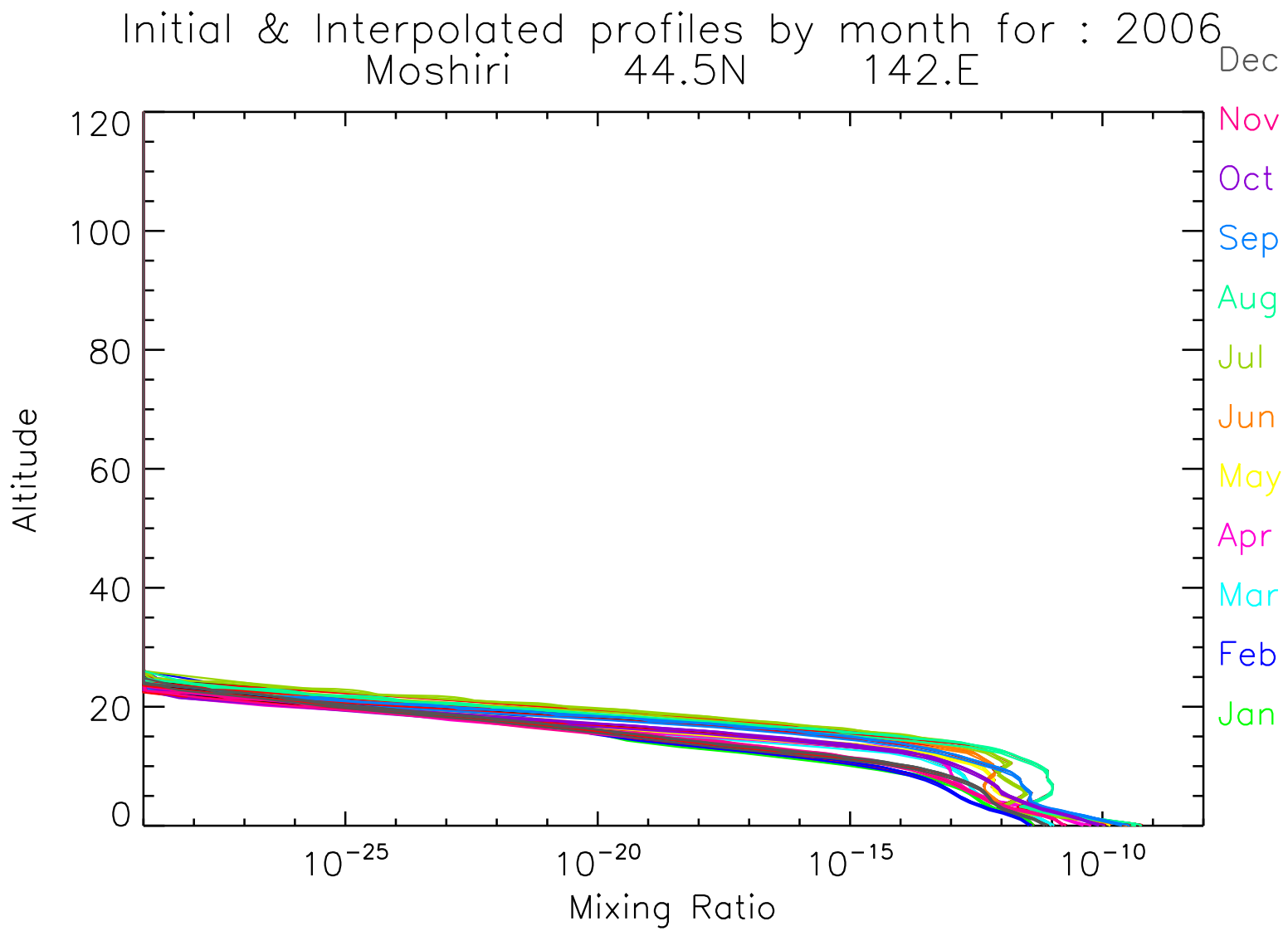
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

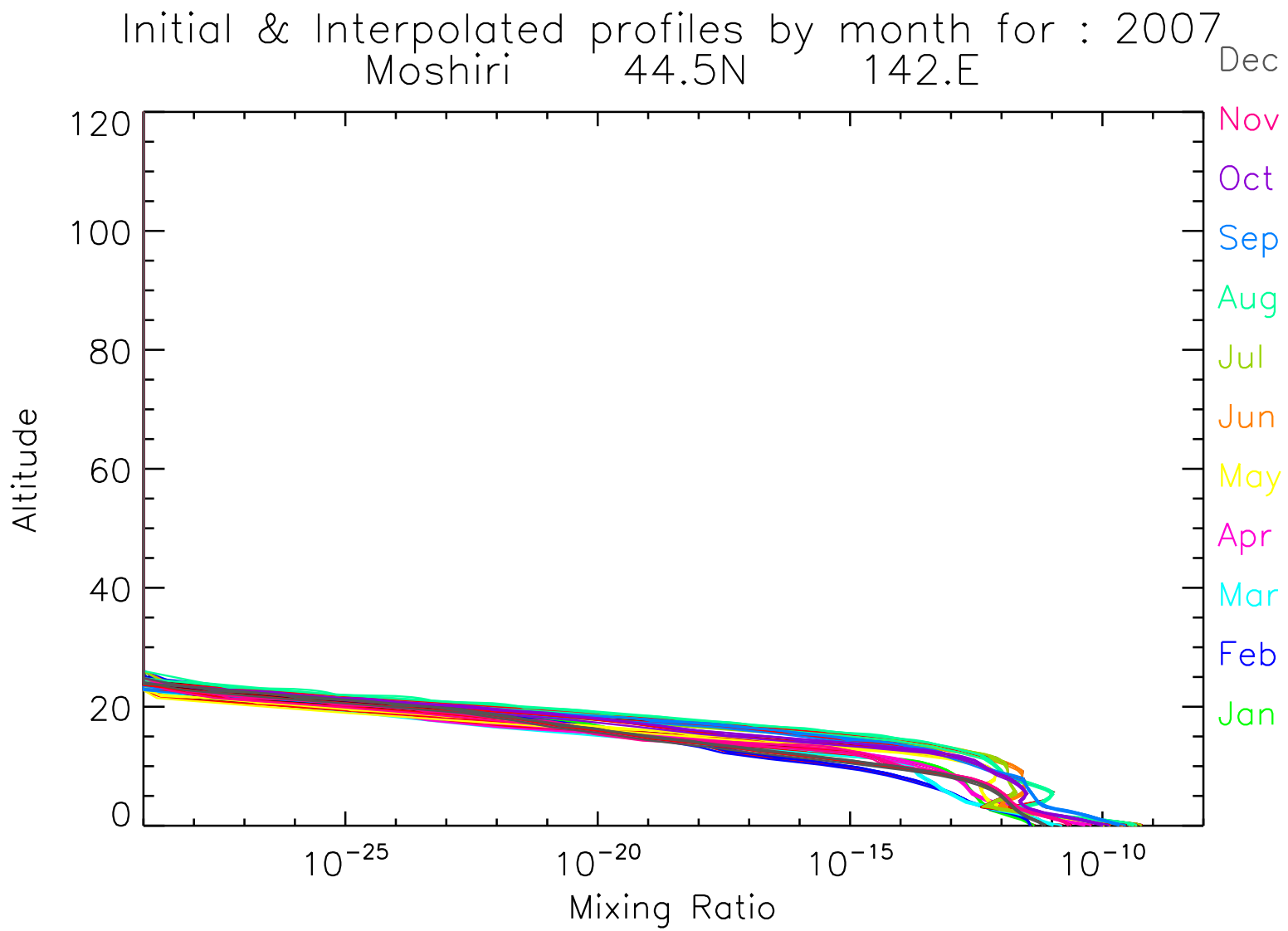

Initial & Interpolated profiles by month for : 2002
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

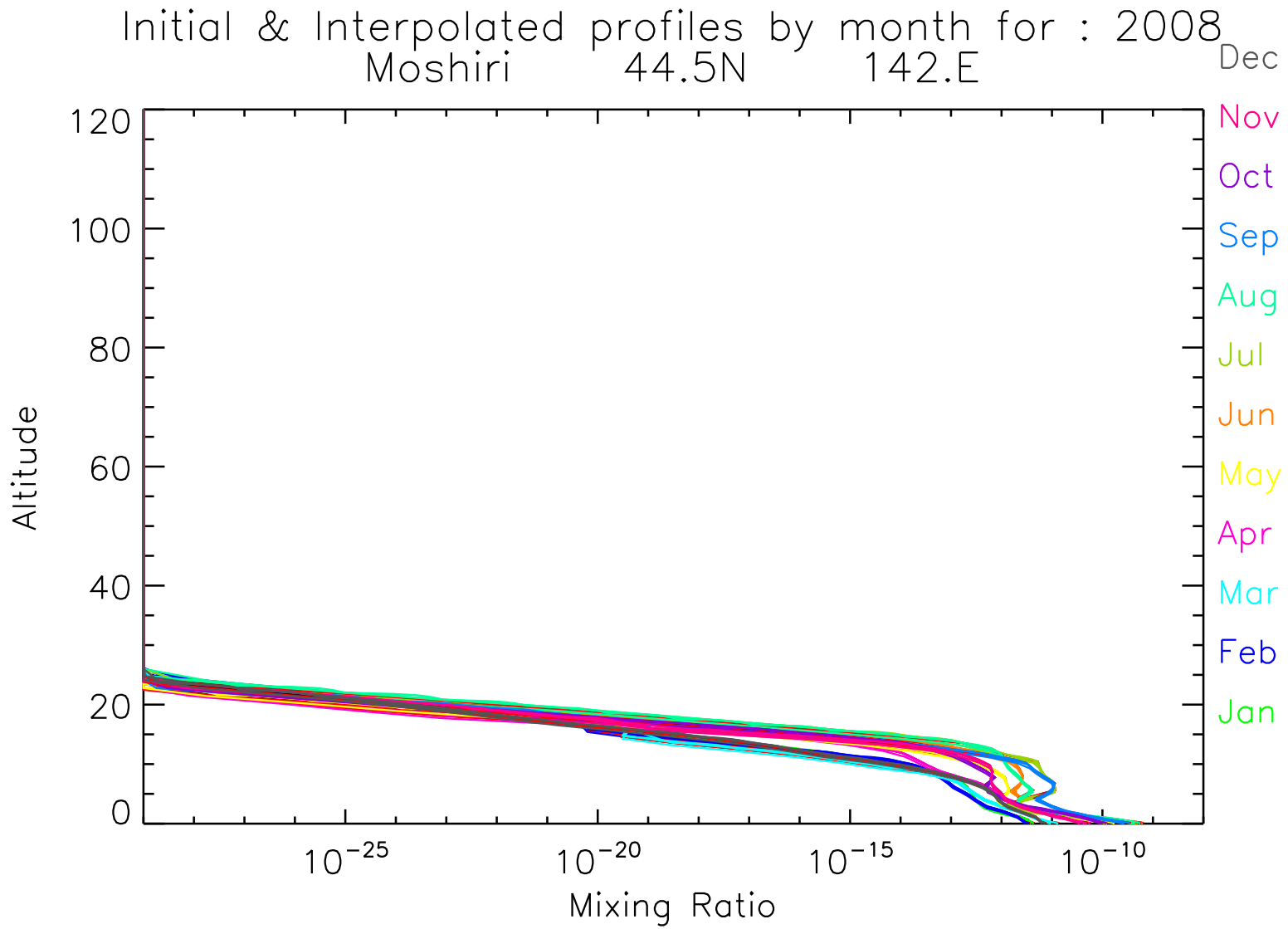

Initial & Interpolated profiles by month for : 2003
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

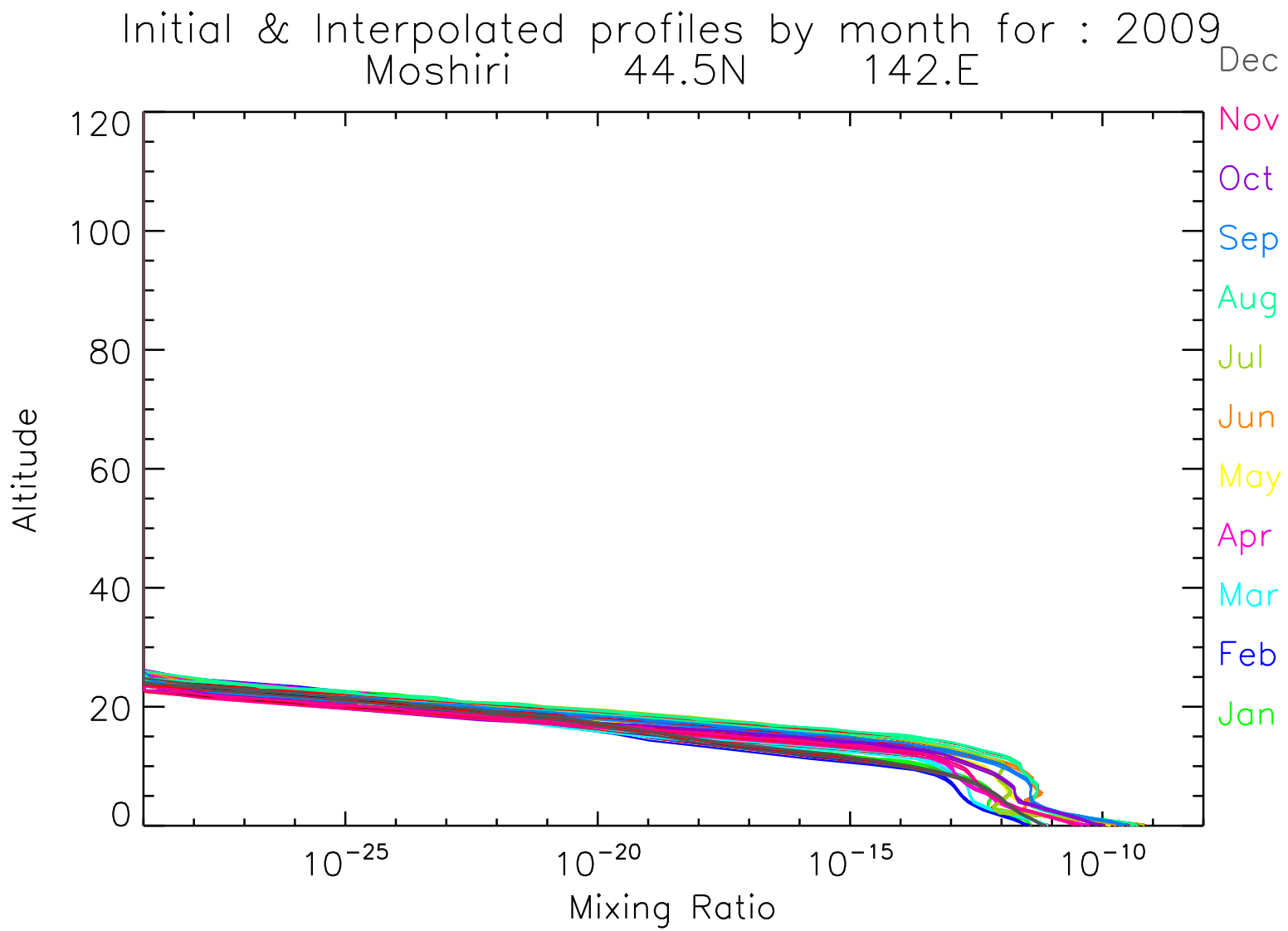

Initial & Interpolated profiles by month for : 2004
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 2005
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 2006
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 2007
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 2008
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 2009
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
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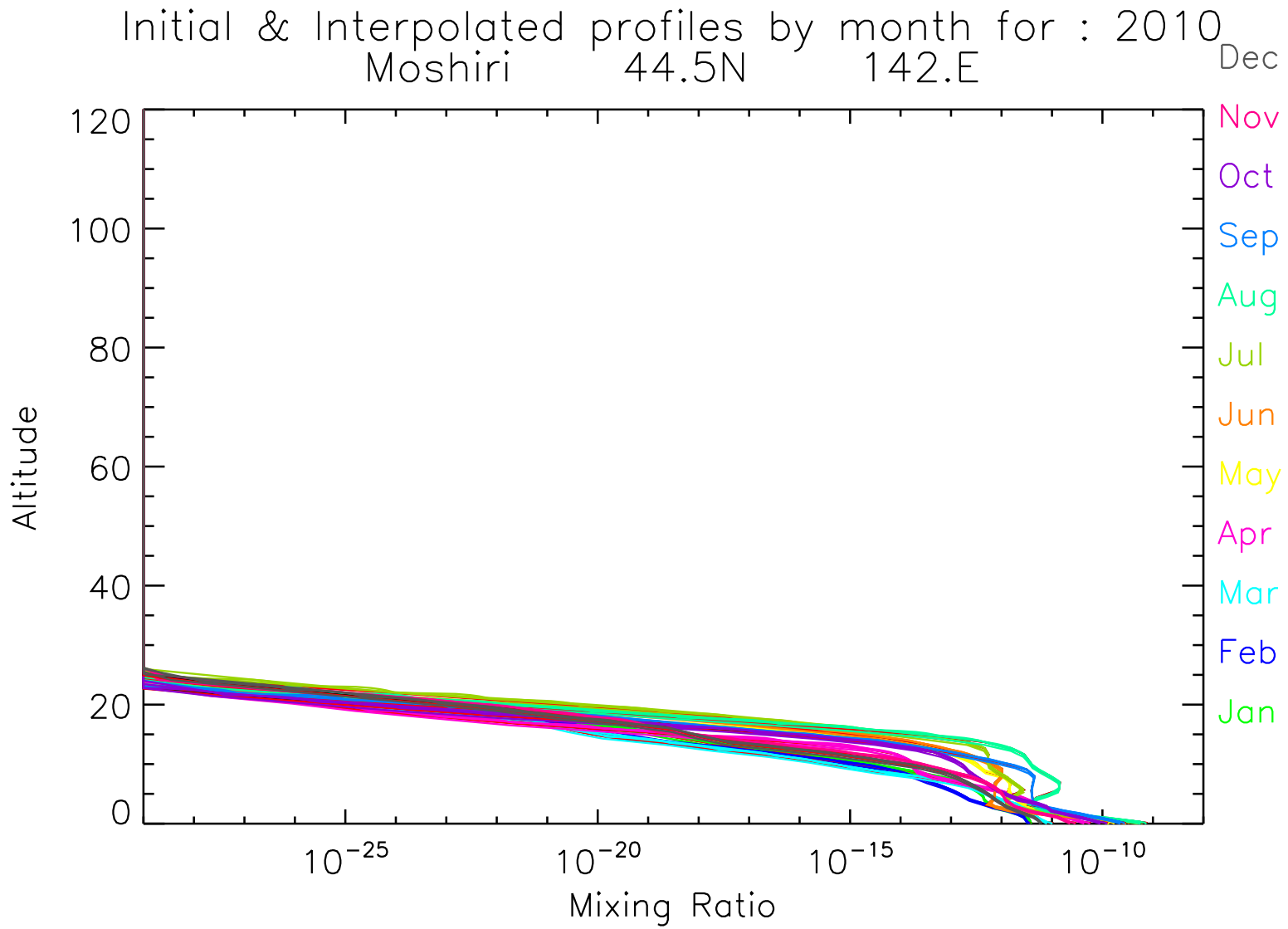
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 2010
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
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40
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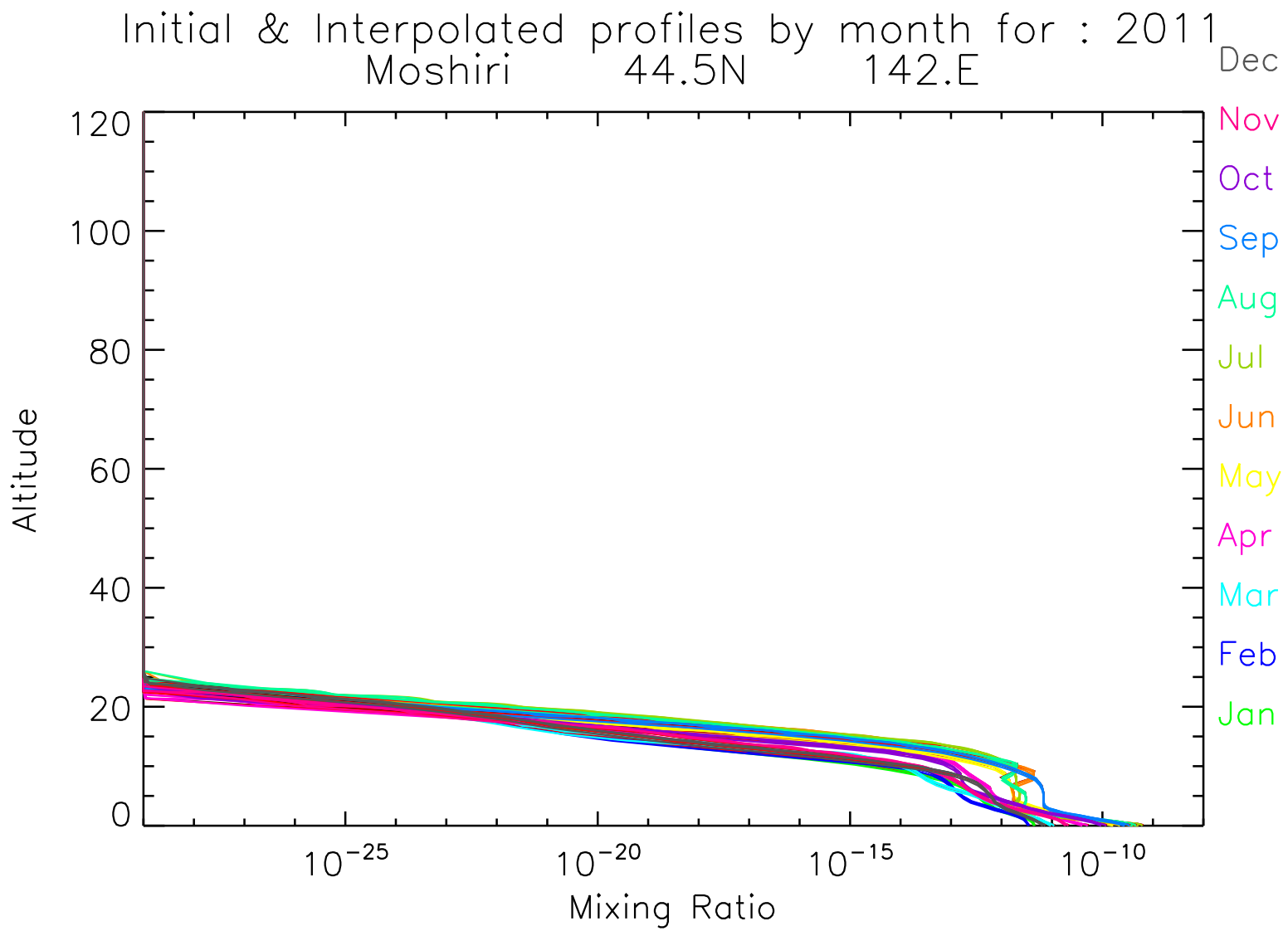
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Initial & Interpolated profiles by month for : 2011
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
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Feb
Jan
120
100
80
60
40
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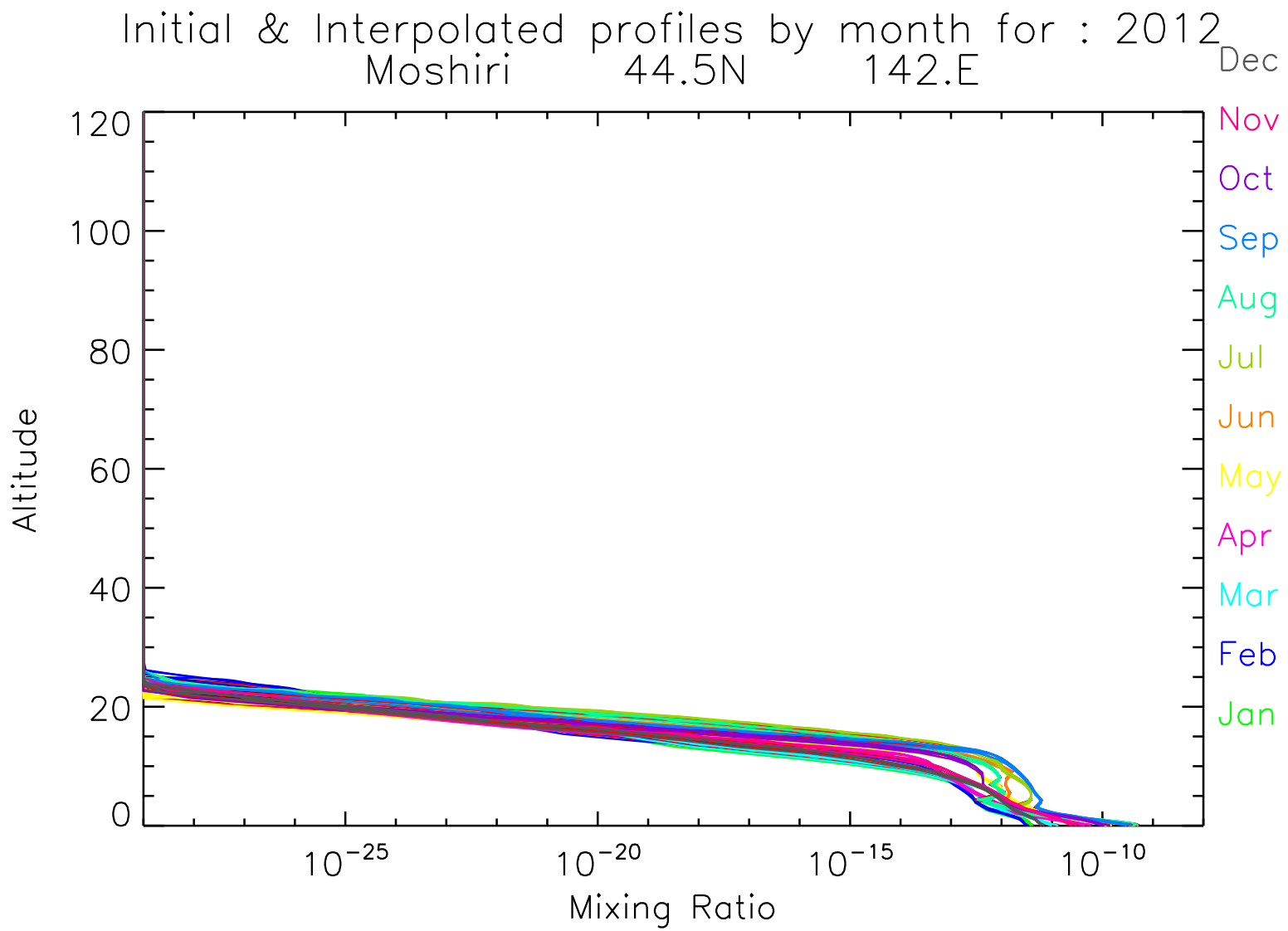
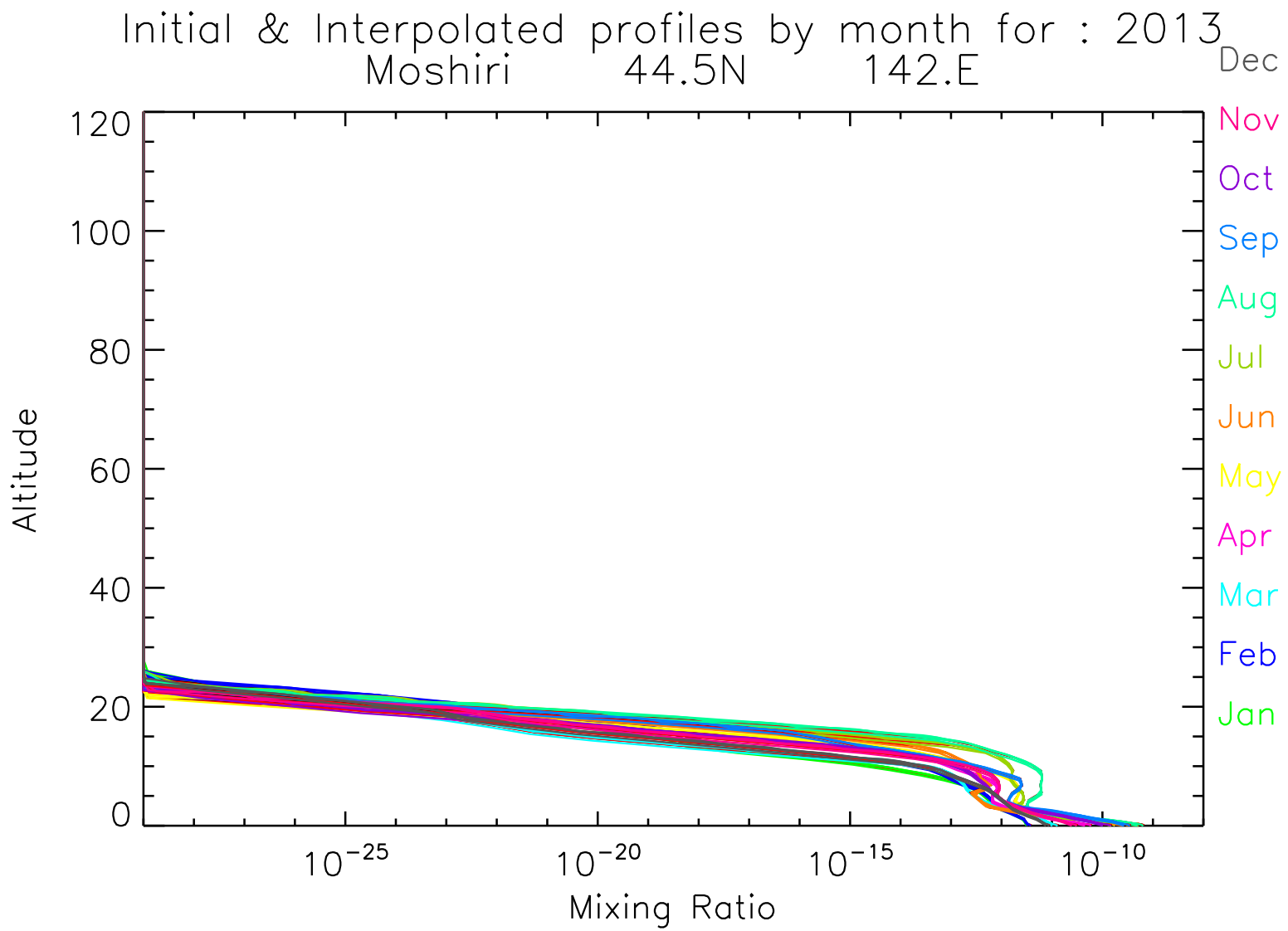
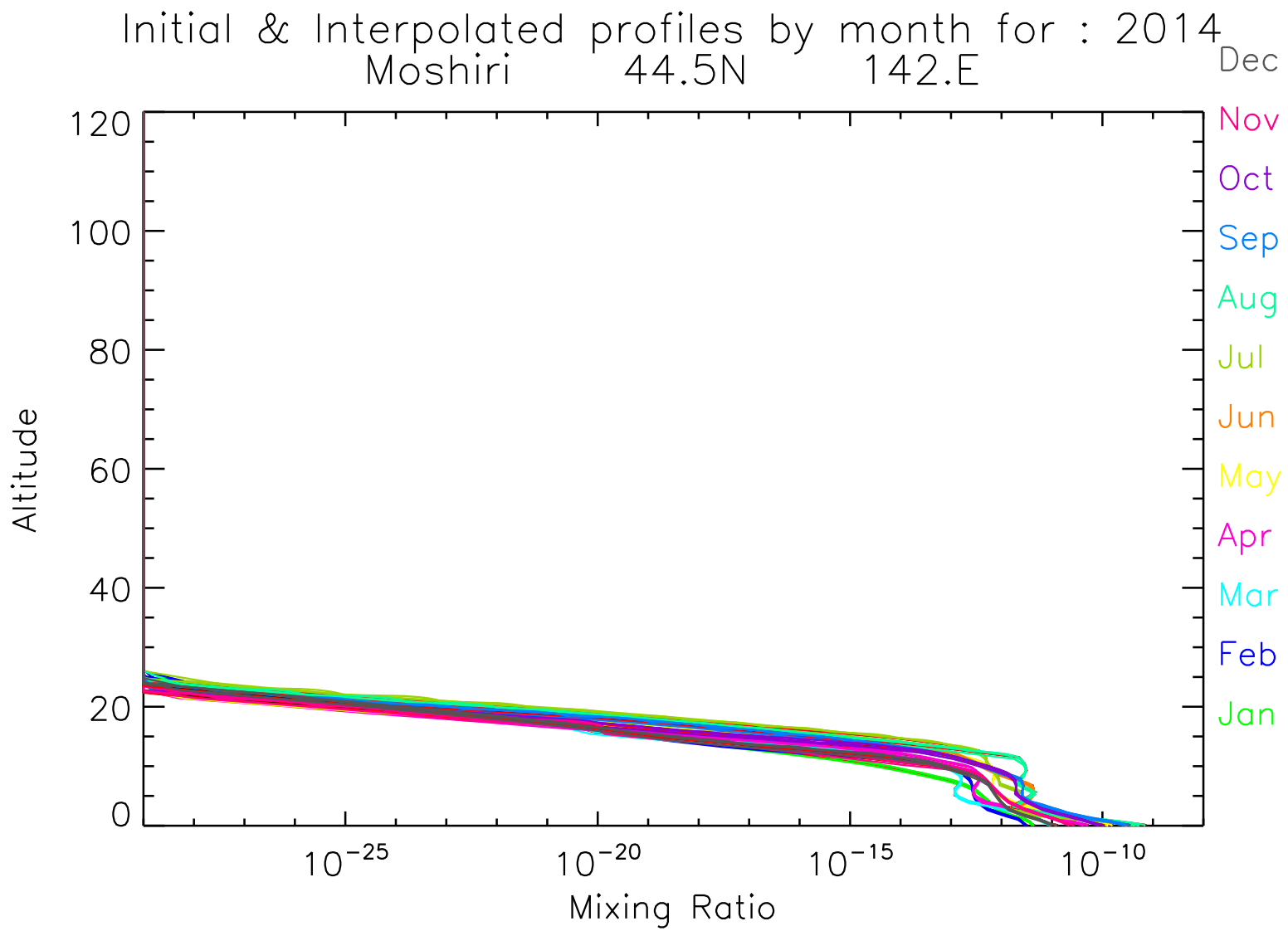
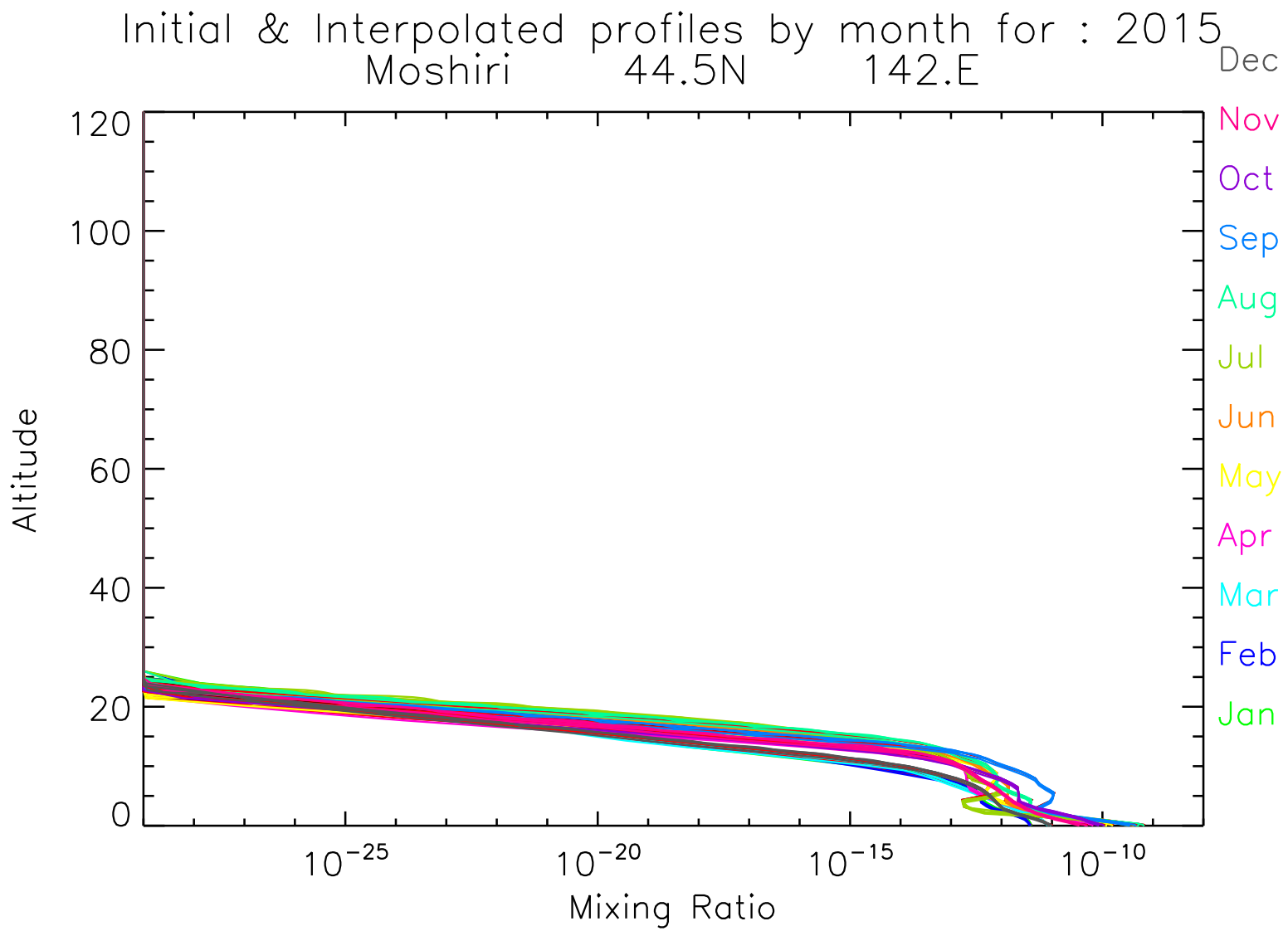
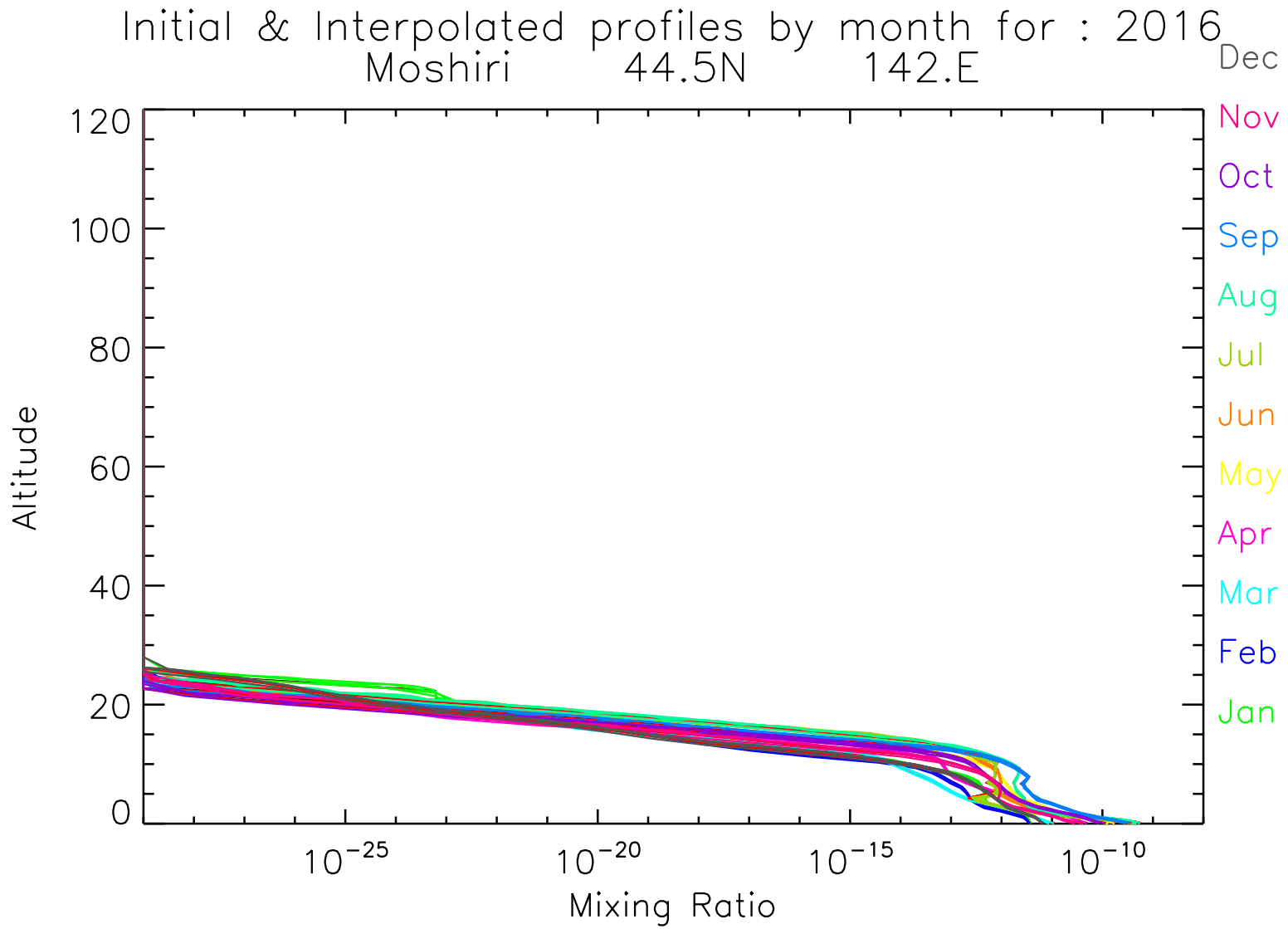
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

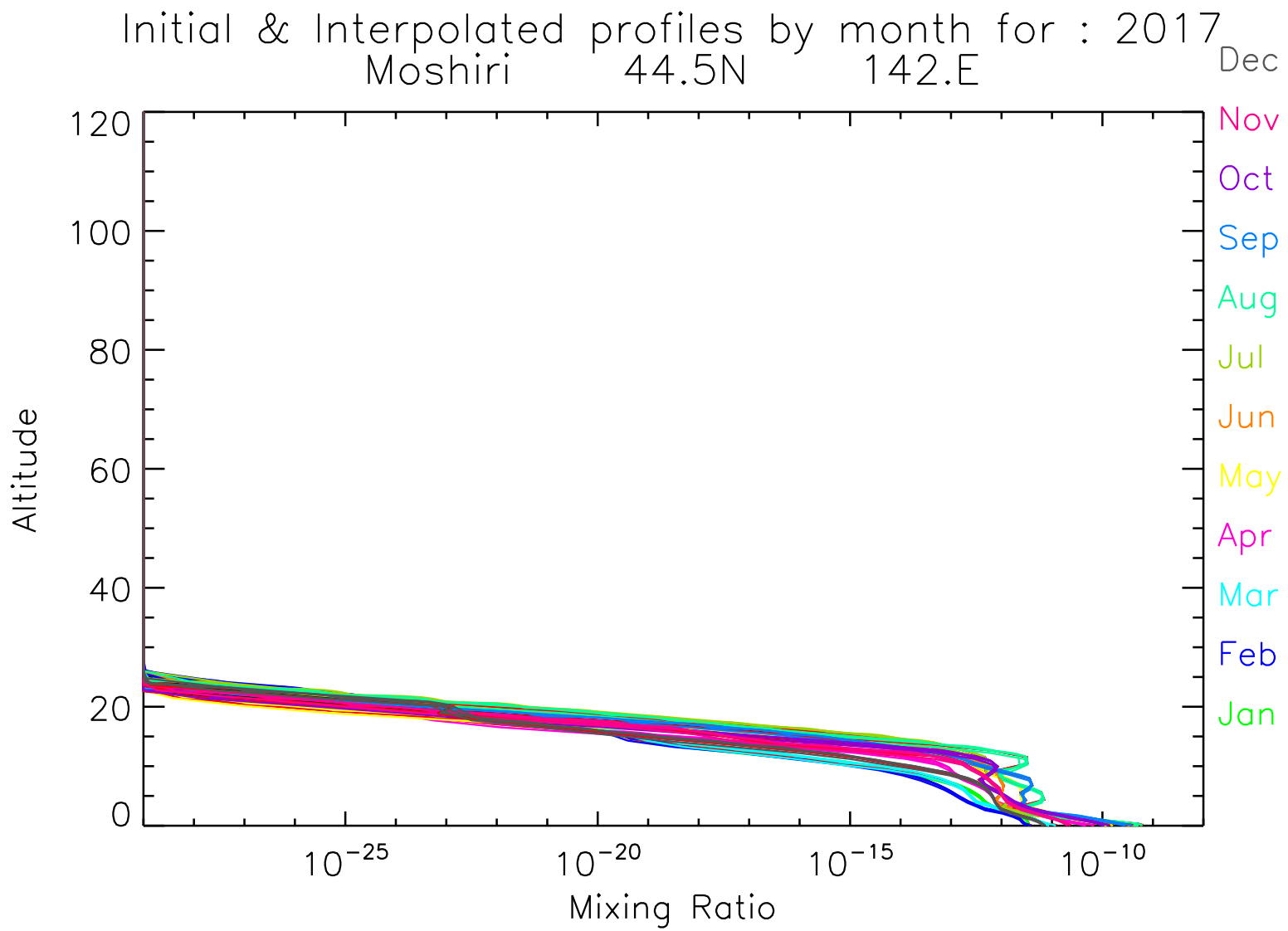

Initial & Interpolated profiles by month for : 2012
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

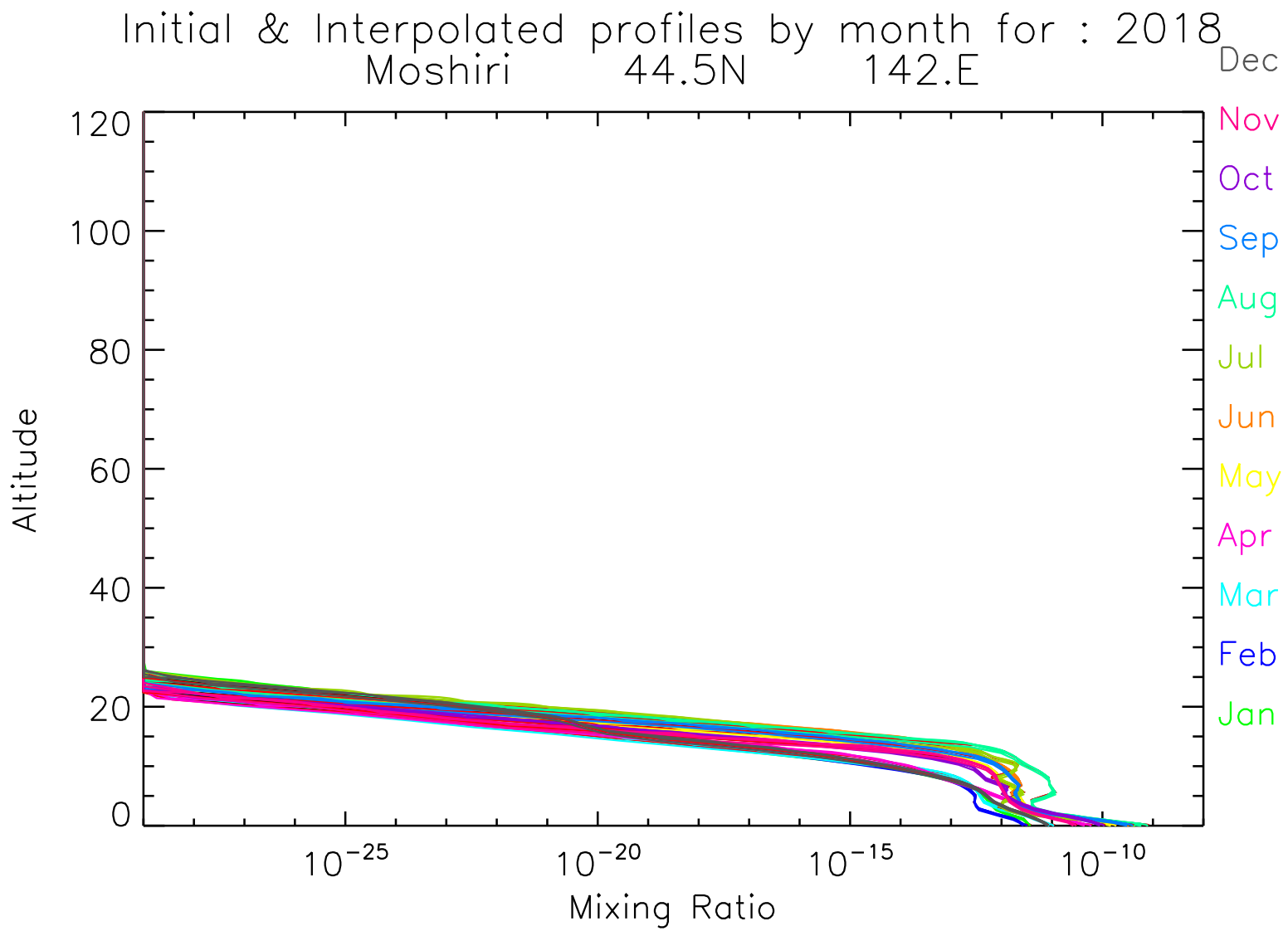

Initial & Interpolated profiles by month for : 2013
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

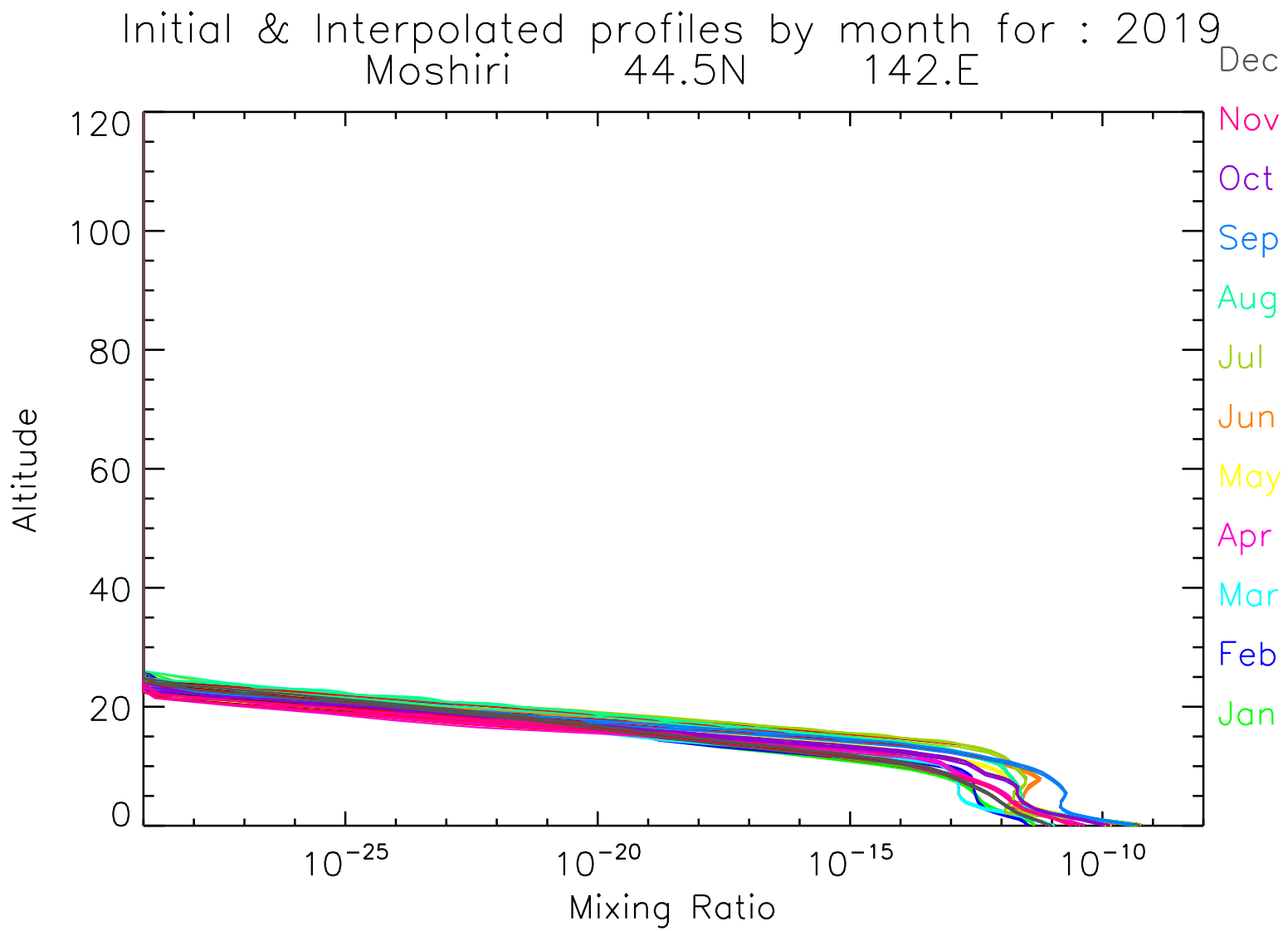

Initial & Interpolated profiles by month for : 2014
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

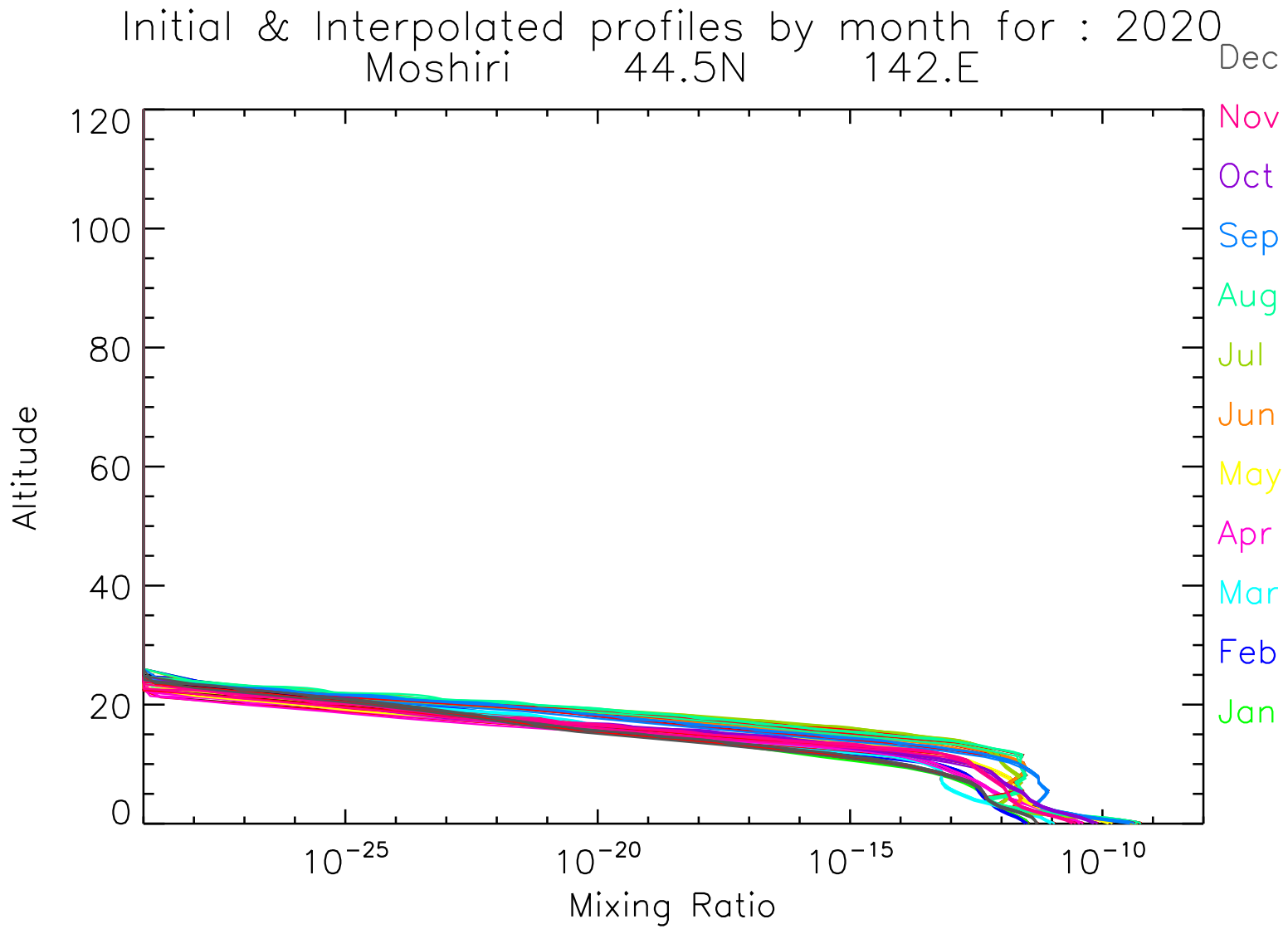

Initial & Interpolated profiles by month for : 2015
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

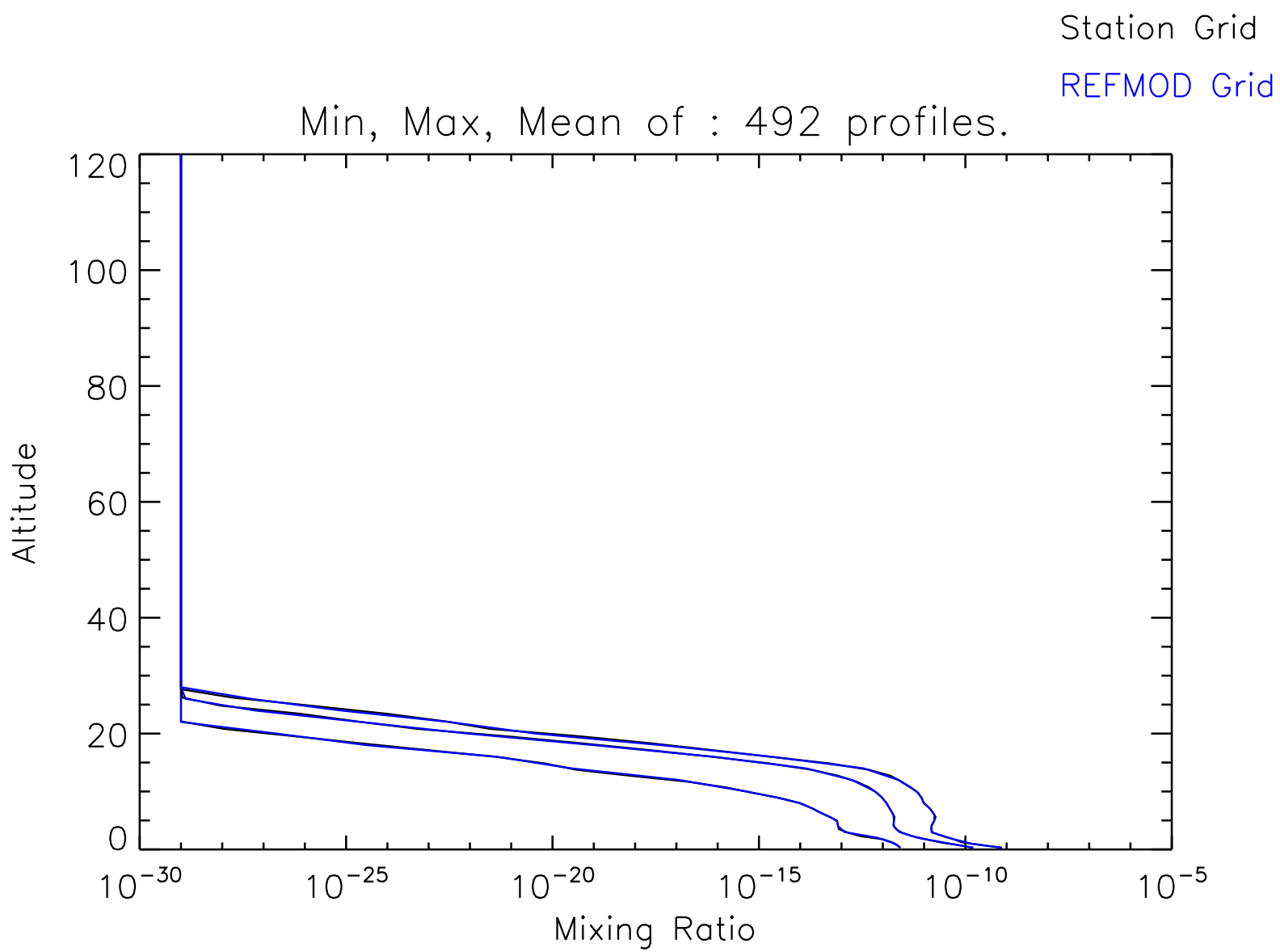

Initial & Interpolated profiles by month for : 2016
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

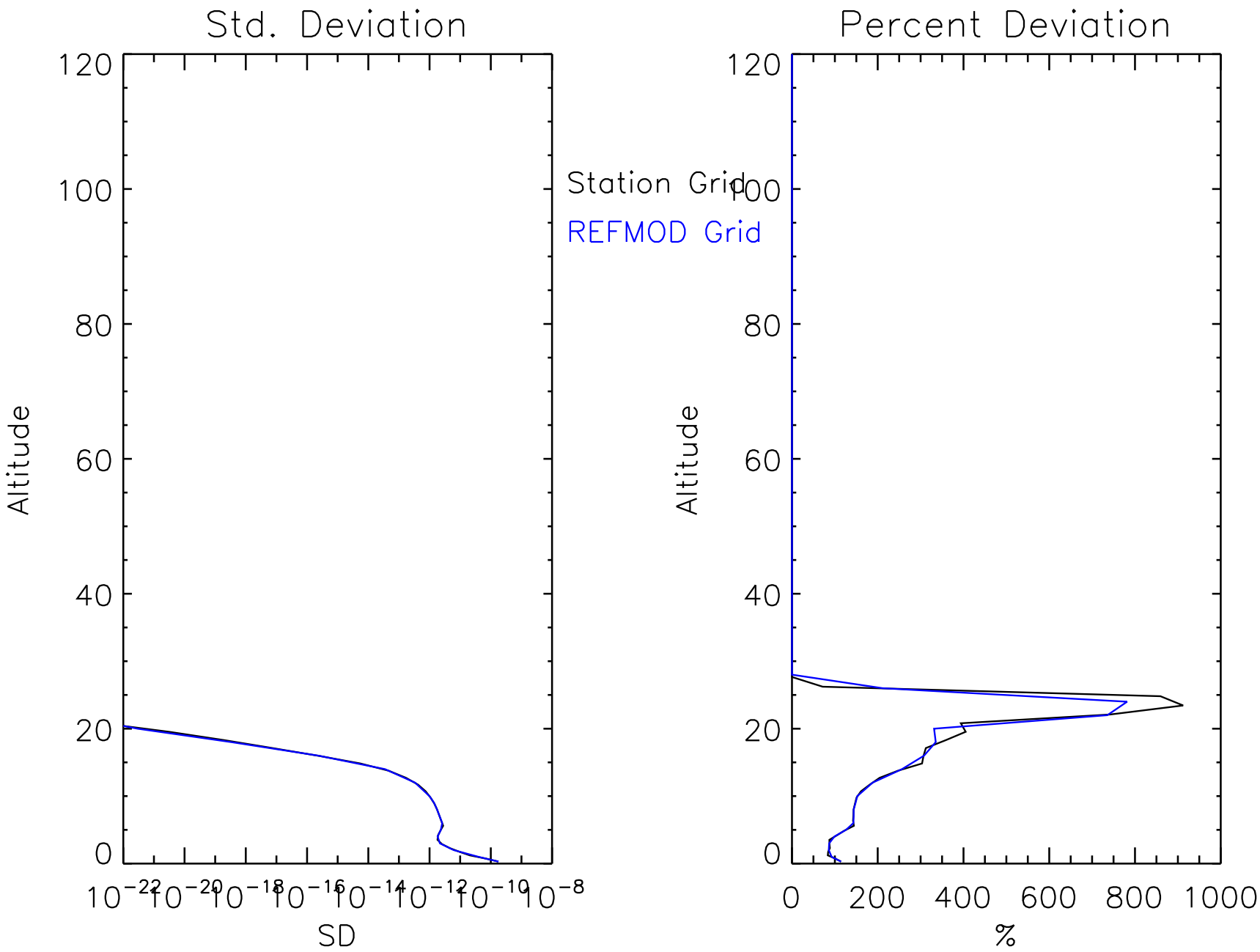

Initial & Interpolated profiles by month for : 2017
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

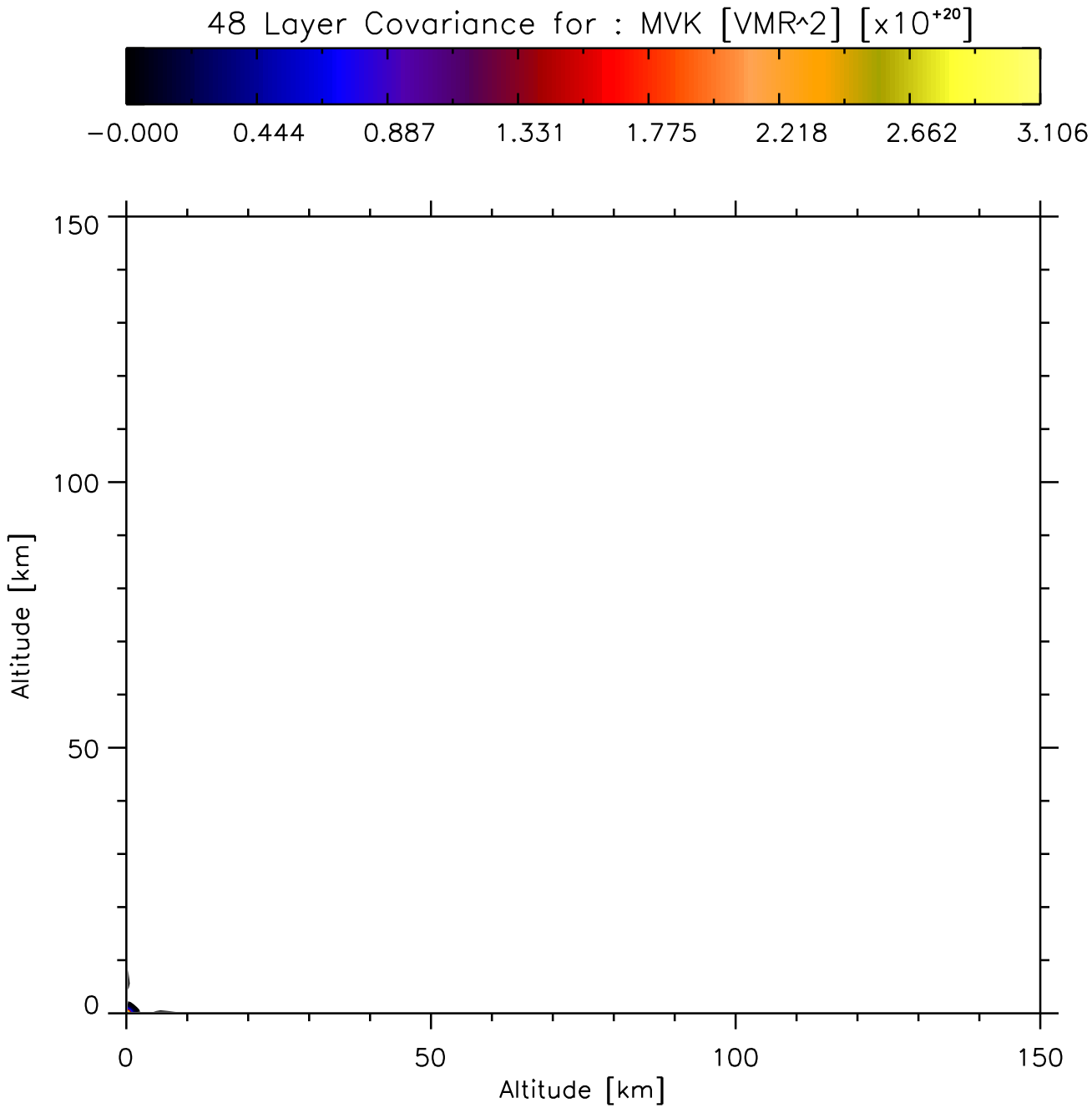

Initial & Interpolated profiles by month for : 2018
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

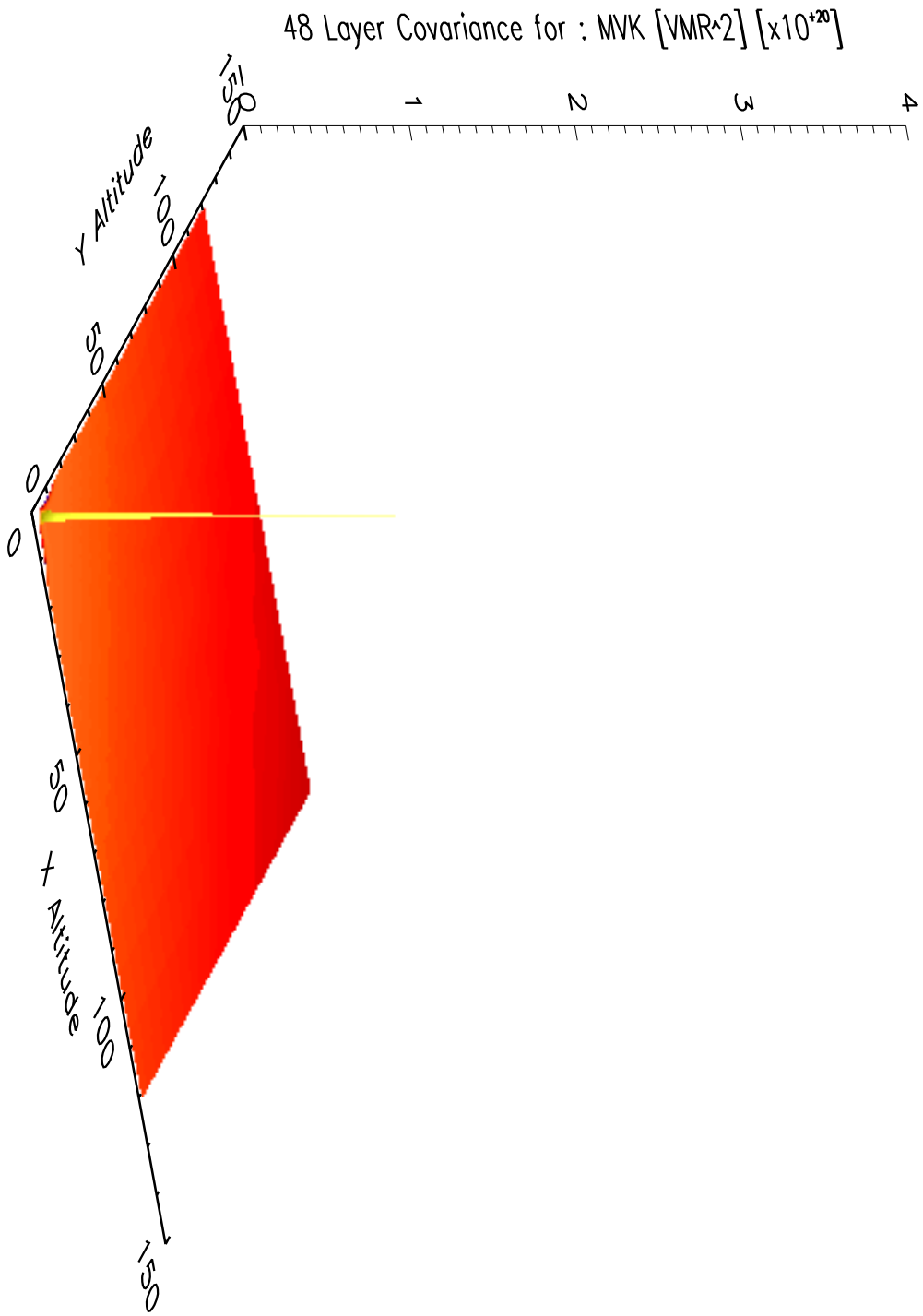

Initial & Interpolated profiles by month for : 2019
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio

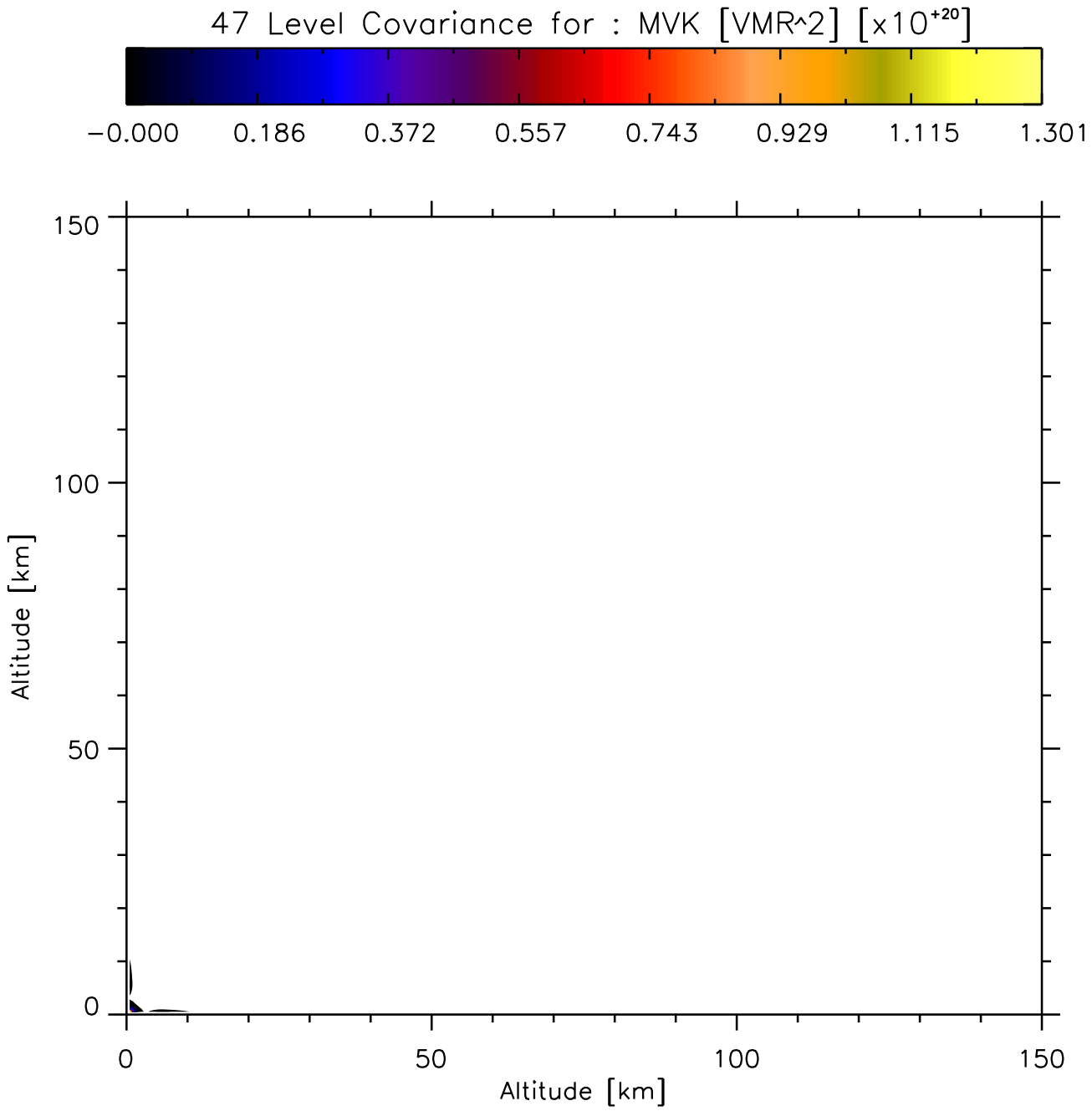

Initial & Interpolated profiles by month for : 2020
Moshiri 44.5N 142.E
Dec
Nov
Oct
Sep
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan
120
100
80
60
40
20
0
Altitude
10^{-25}
10^{-20}
10^{-15}
10^{-10}
Mixing Ratio


Station Grid
REFMOD Grid
Min, Max, Mean of : 492 profiles.
Altitude
120
100
80
60
40
20
0
10^{-30}
10^{-25}
10^{-20}
10^{-15}
10^{-10}
10^{-5}
Mixing Ratio


Std. Deviation
Percent Deviation
Station Grid
REFMOD Grid
Altitude
Altitude
120
100
80
60
40
20
0
10^{-22} 10^{-20} 10^{-18} 10^{-16} 10^{-14} 10^{-12} 10^{-10} 10^{-8}
SD
0 200 400 600 800 1000
%


48 Layer Covariance for : MVK [VMR^2] [x10^+20]
−0.000
0.444
0.887
1.331
1.775
2.218
2.662
3.106
150
100
50
0
Altitude [km]
0
50
100
150
Altitude [km]


48 Layer Covariance for : MVK [VMR^2] [x10^+20]
Y Altitude
X Altitude
0
50
100
150
1
2
3
4


47 Level Covariance for : MVK [VMR^2] [x10^+20]
−0.000
0.186
0.372
0.557
0.743
0.929
1.115
1.301
150
100
50
0
Altitude [km]
0
50
100
150
Altitude [km]

47 Level Covariance for : MVK [VMR^2] [x10^-20]
1.5
1.0
0.5
0.0
Y Altitude
0
30
60
90
120
150
X Altitude
0
50
100
150