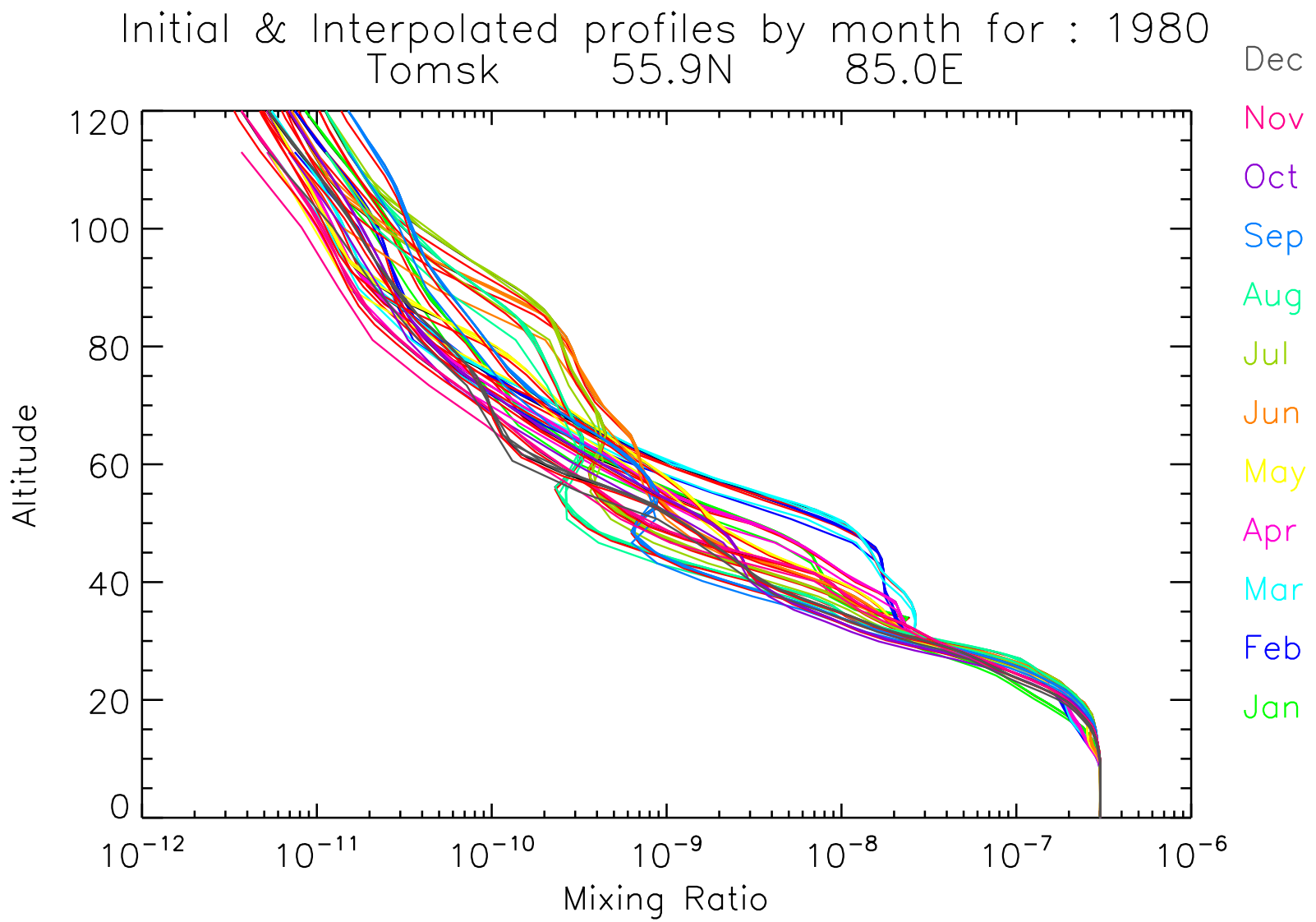
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Mixing Ratio
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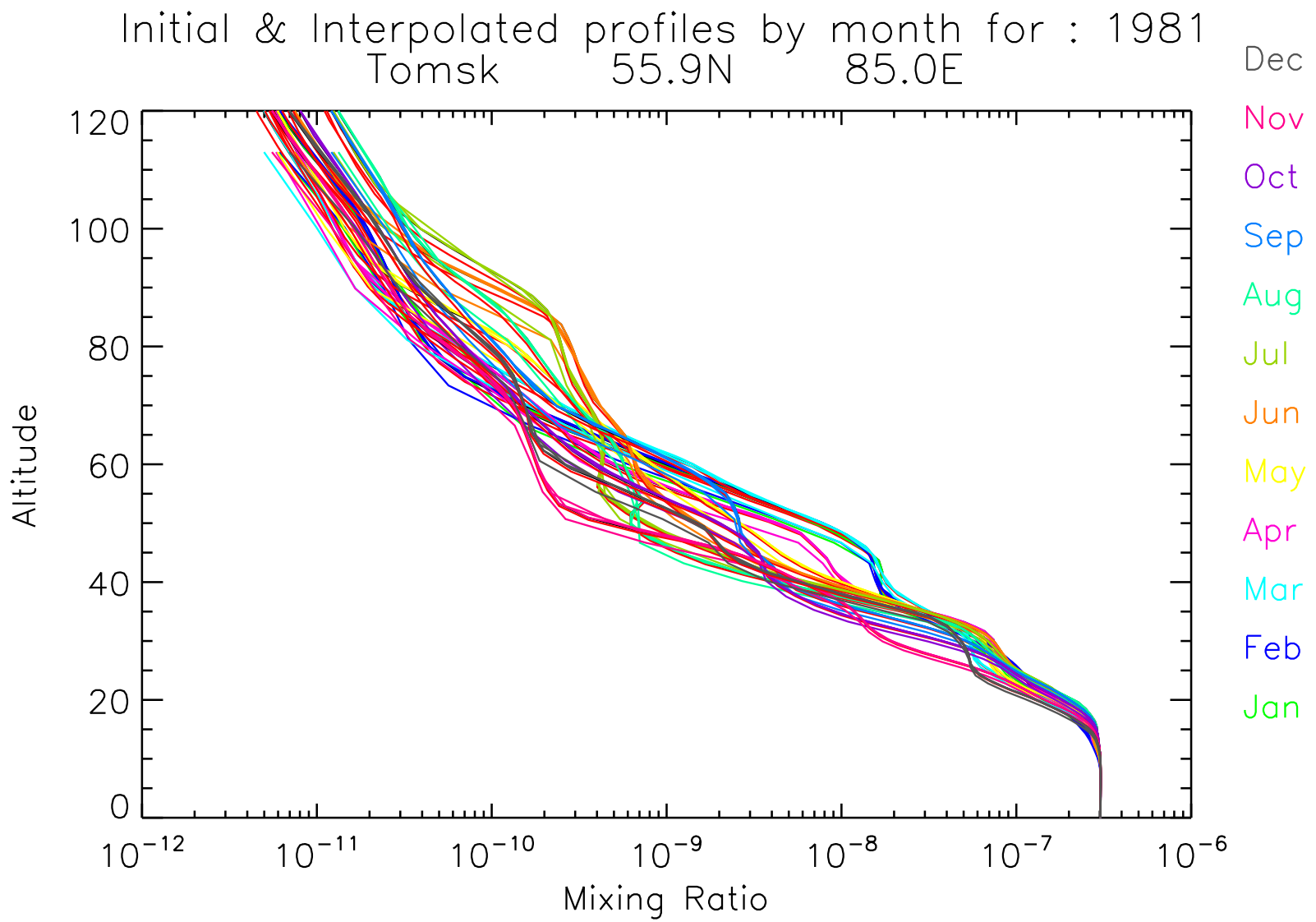
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Mixing Ratio
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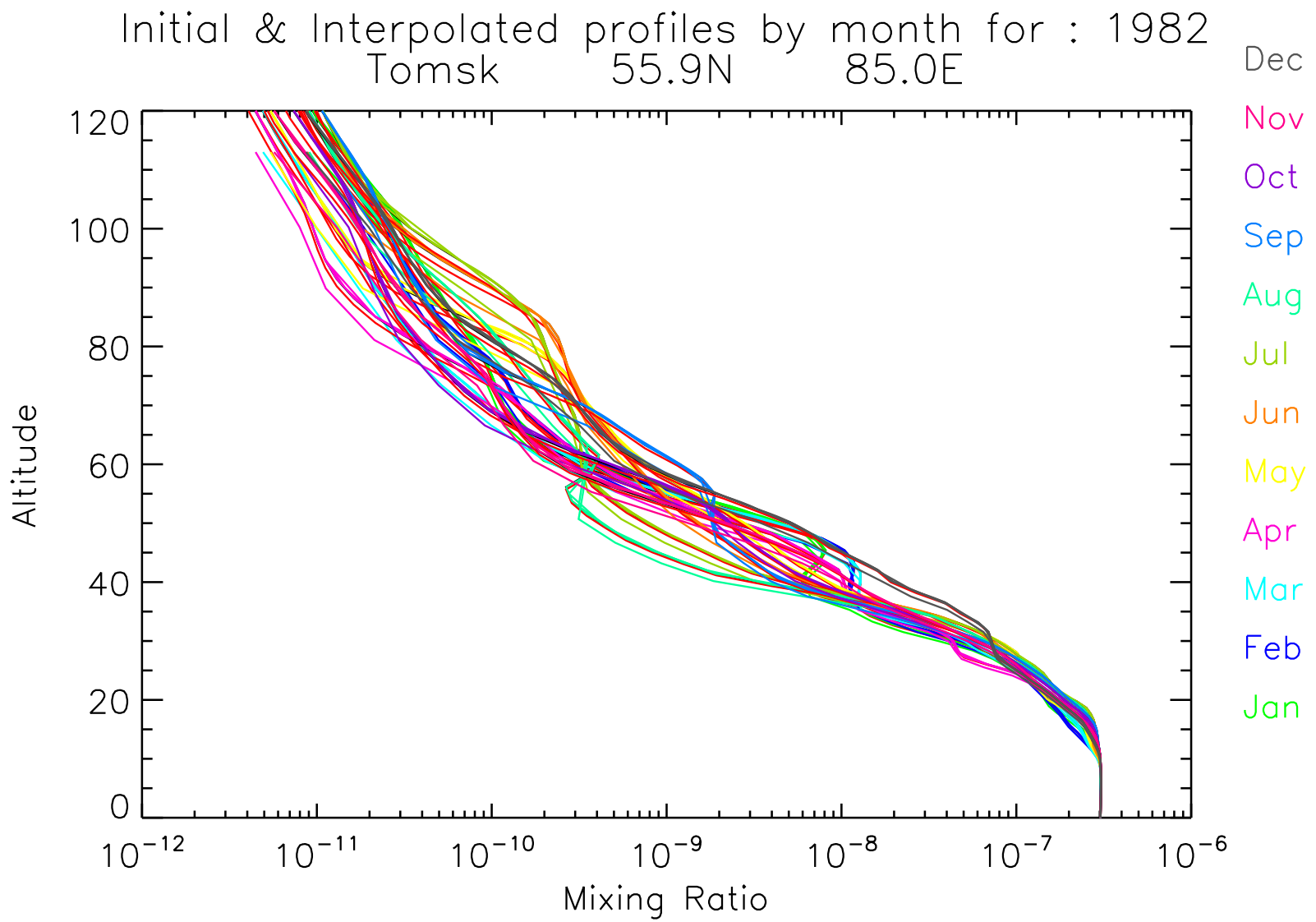
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Mixing Ratio
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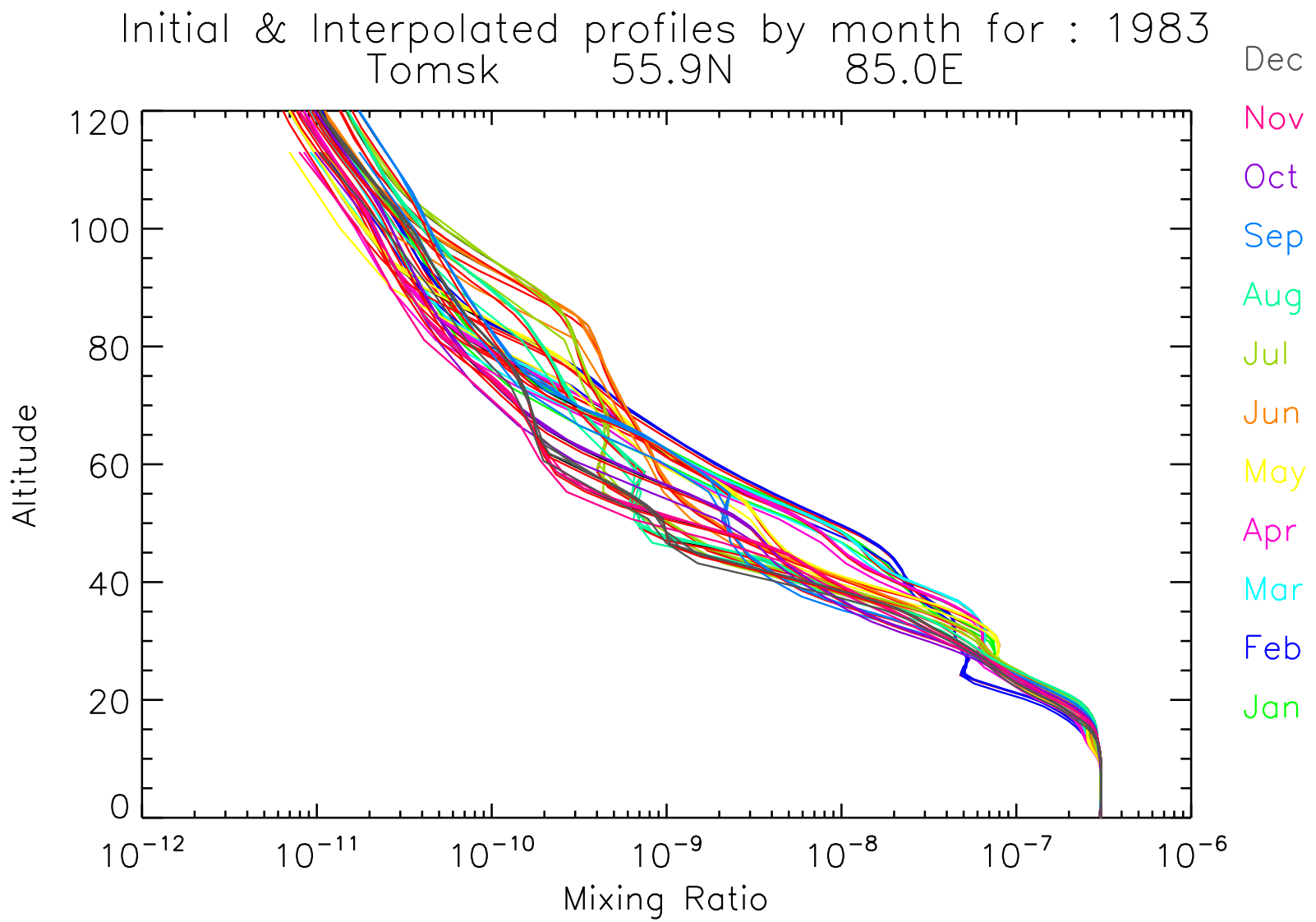
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Mixing Ratio
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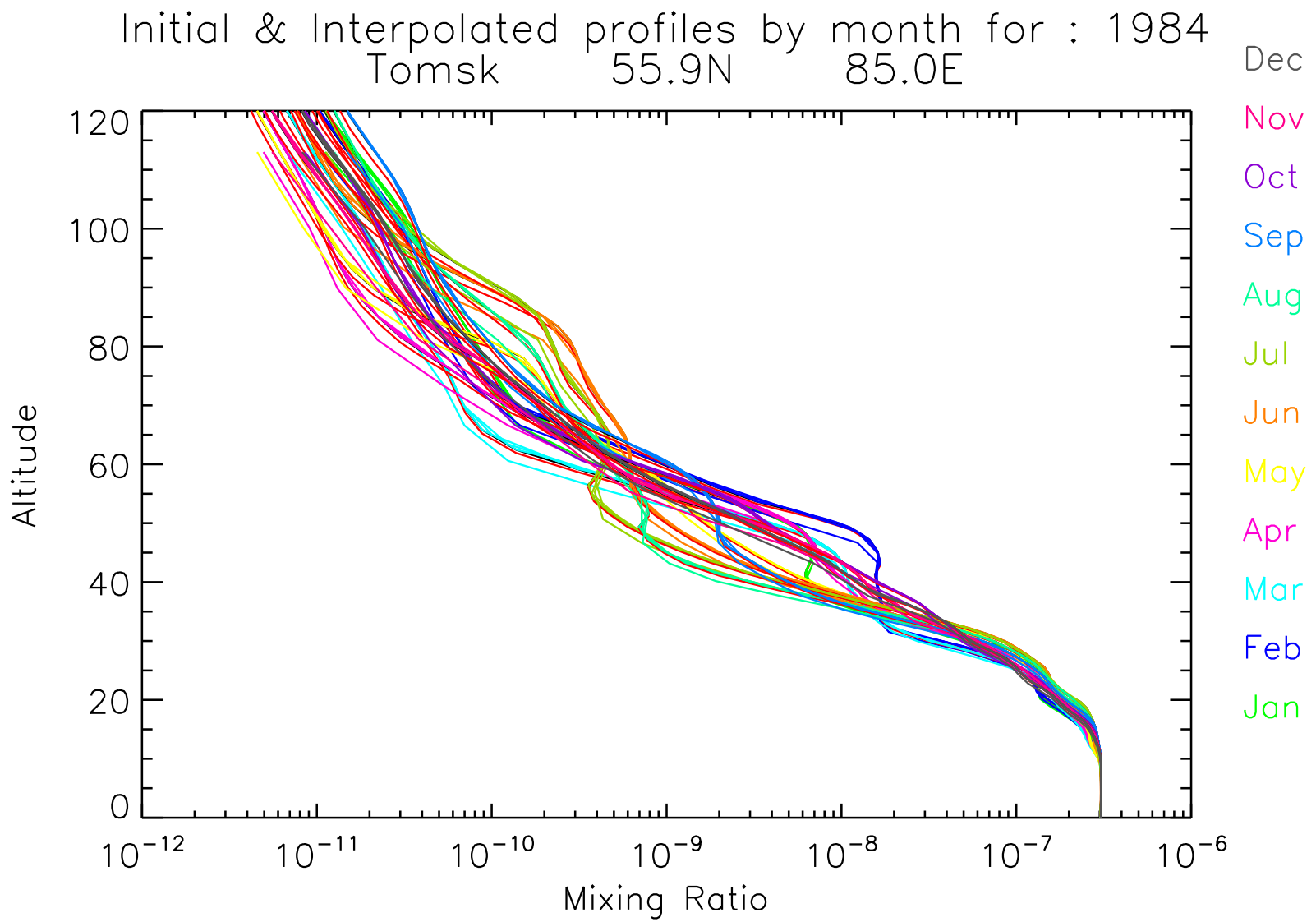
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Mixing Ratio
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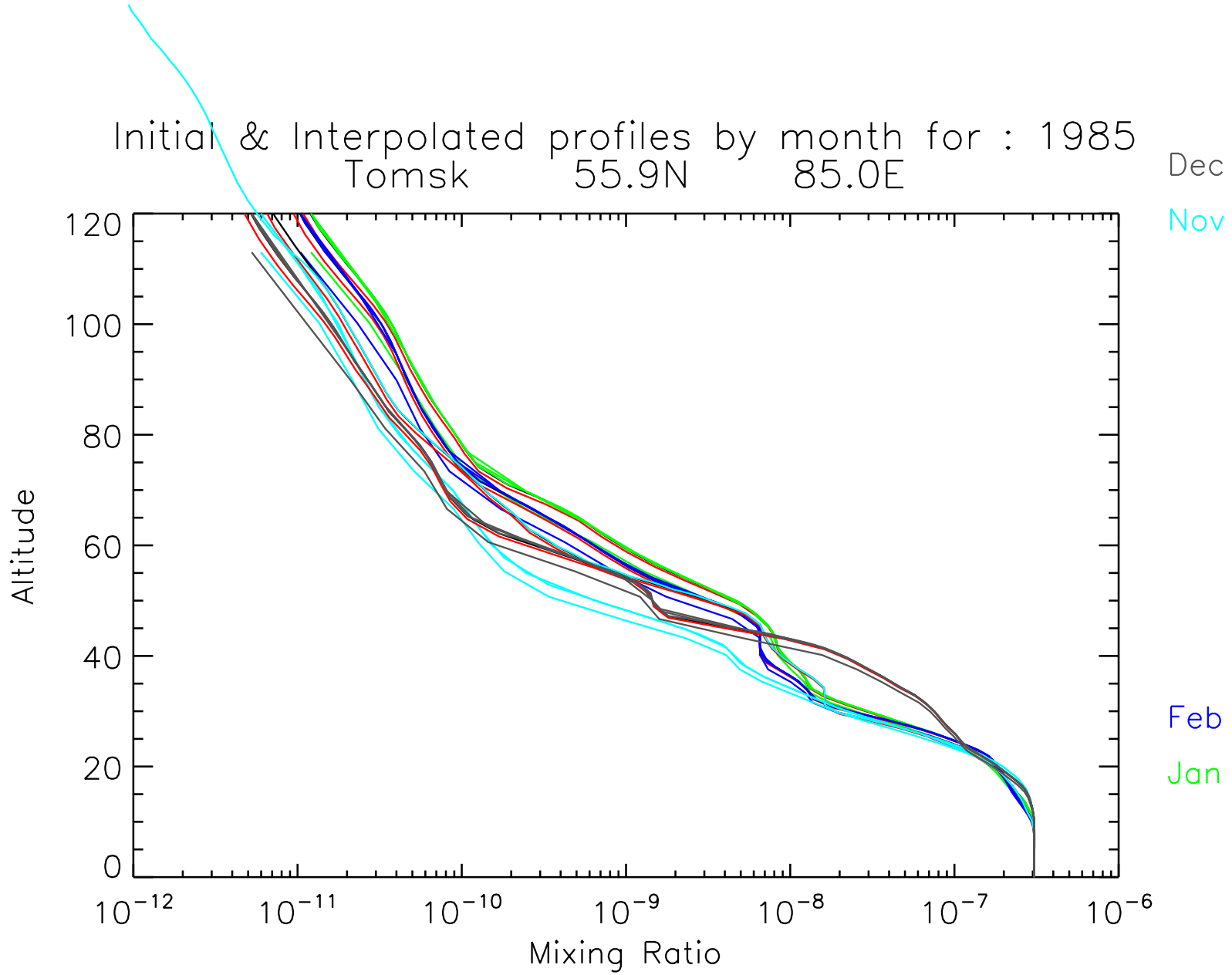
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Altitude
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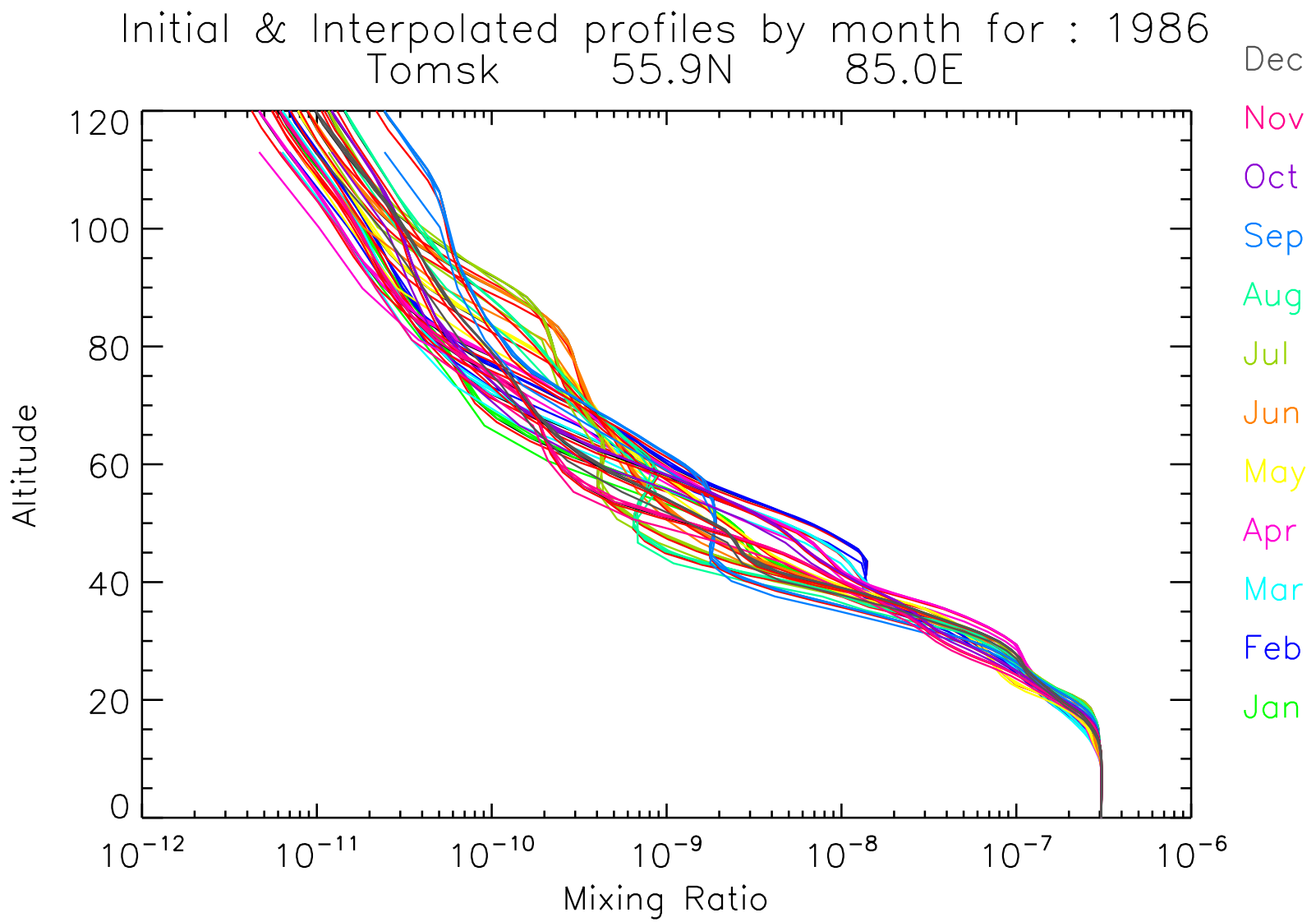
Mixing Ratio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Tomsk 55.9N 85.0E
Altitude
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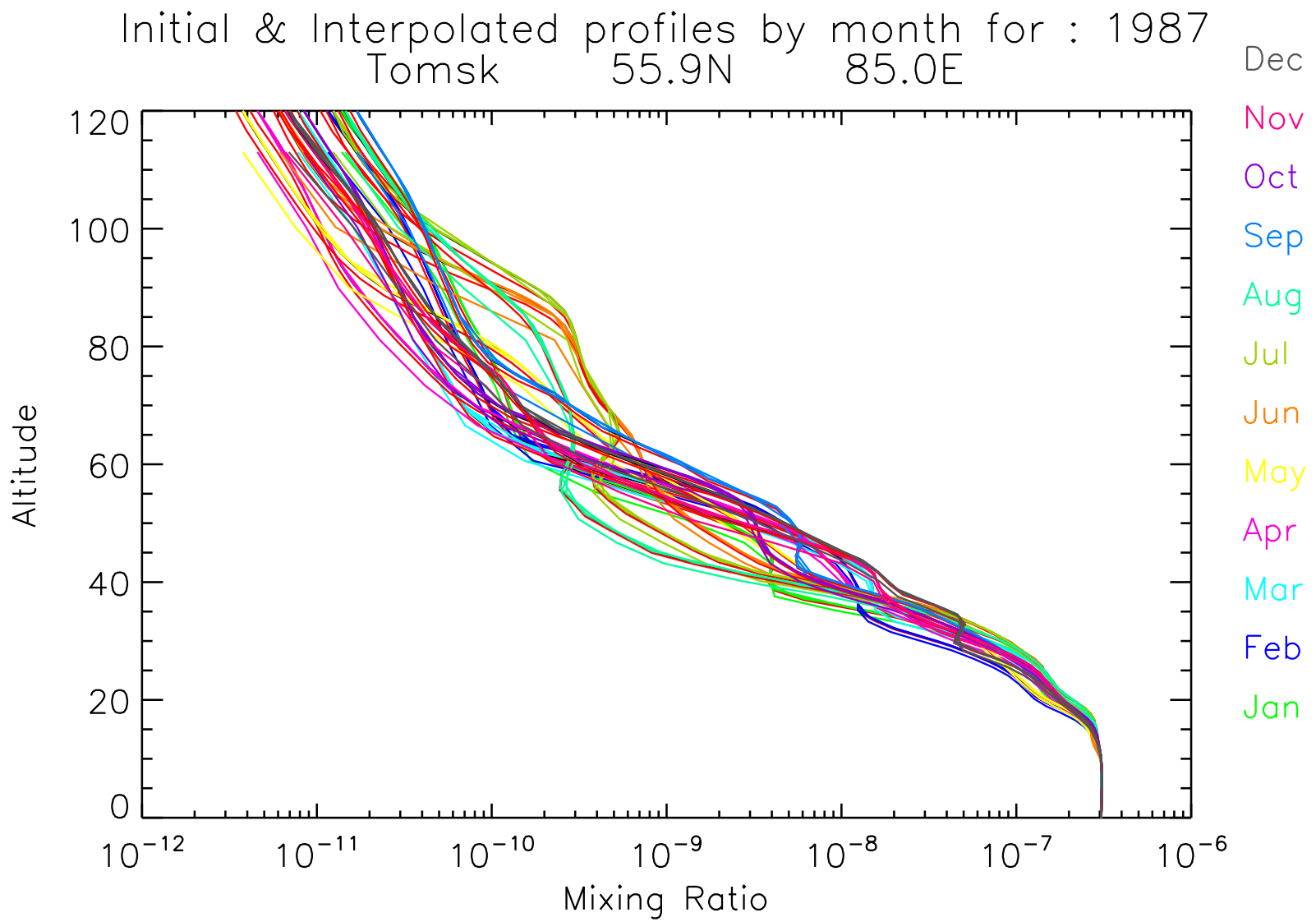
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Altitude
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Mixing Ratio
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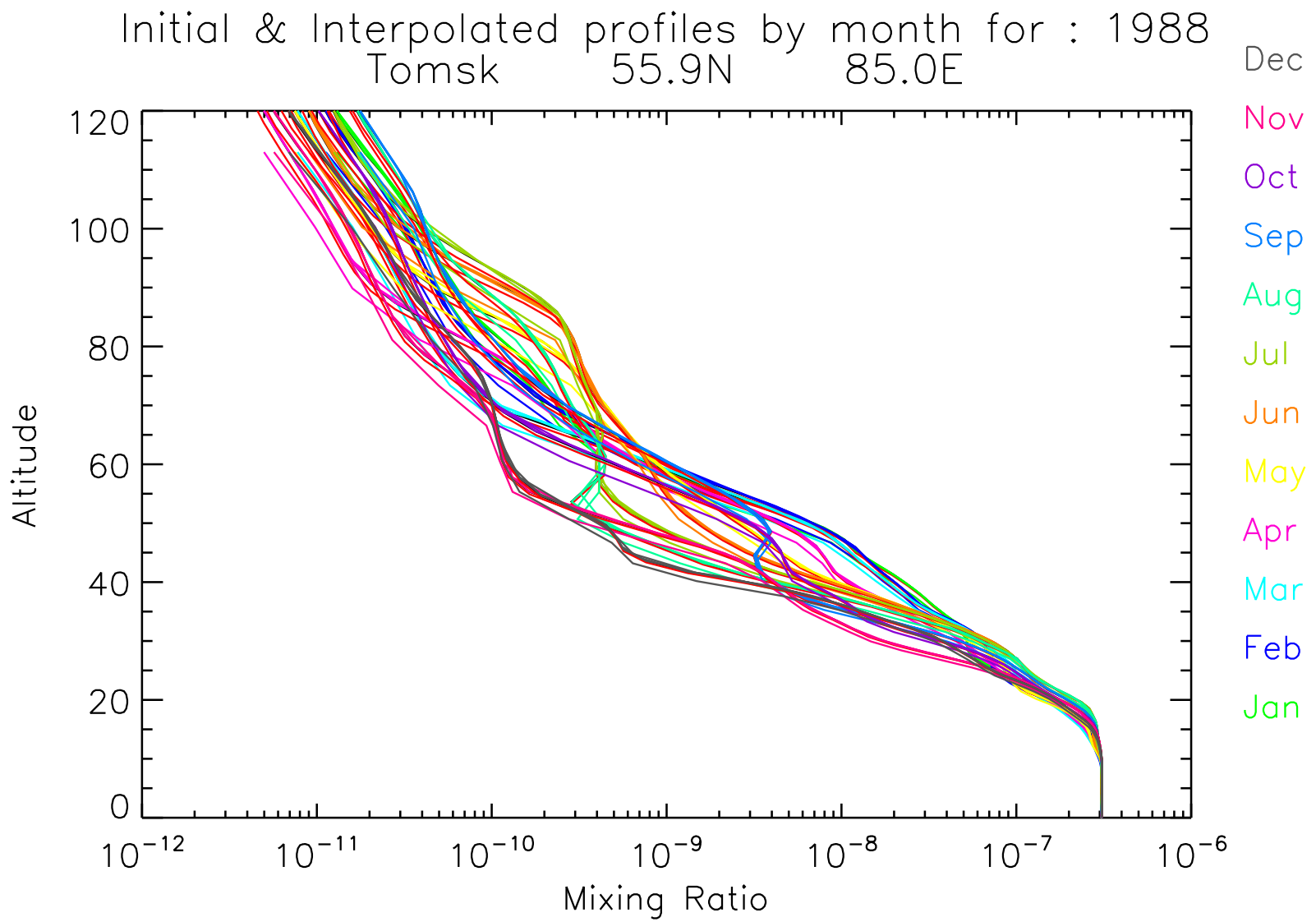
Initial & Interpolated profiles by month for : 1988
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Altitude
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Mixing Ratio
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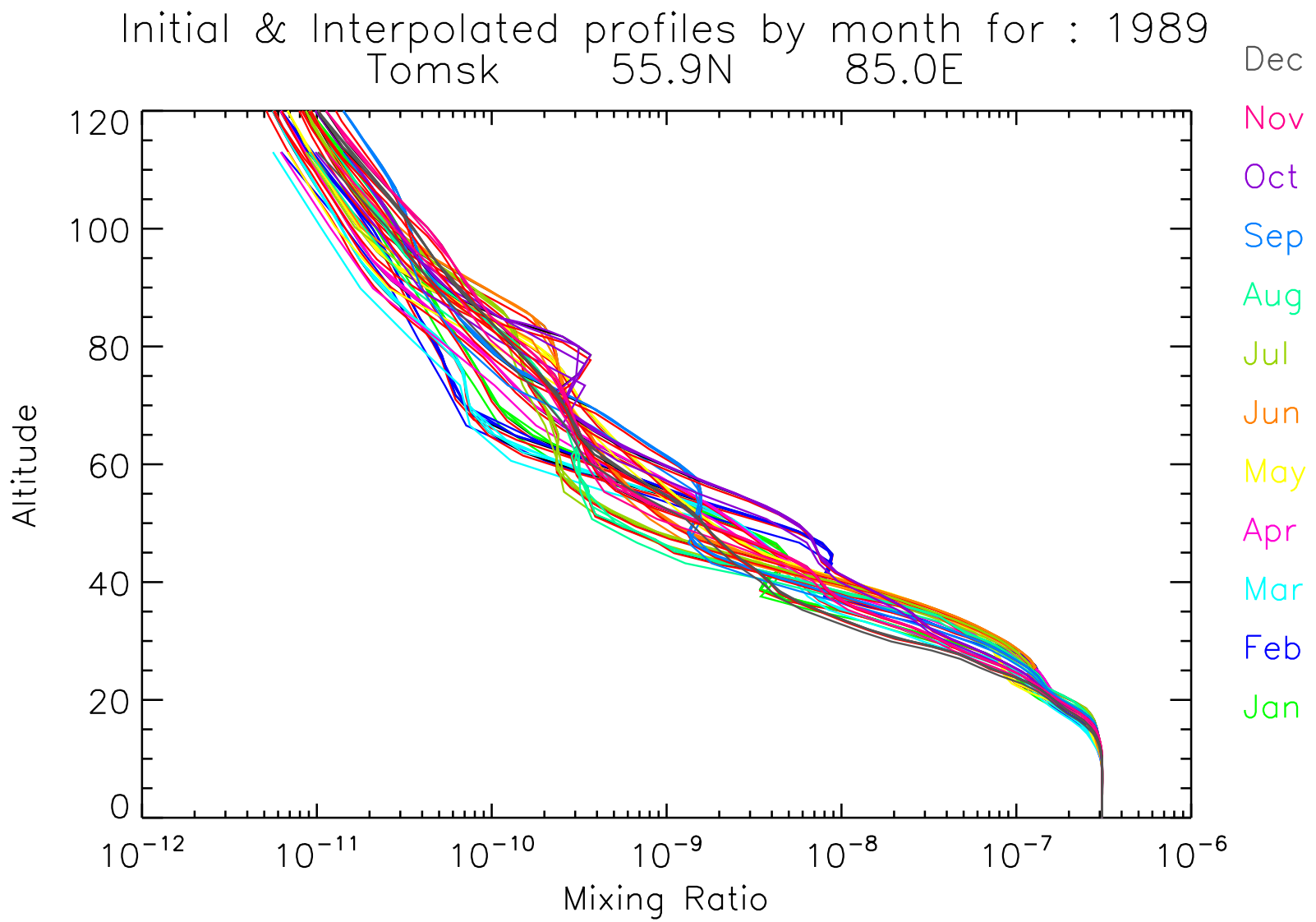
Initial & Interpolated profiles by month for : 1989
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Altitude
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Mixing Ratio
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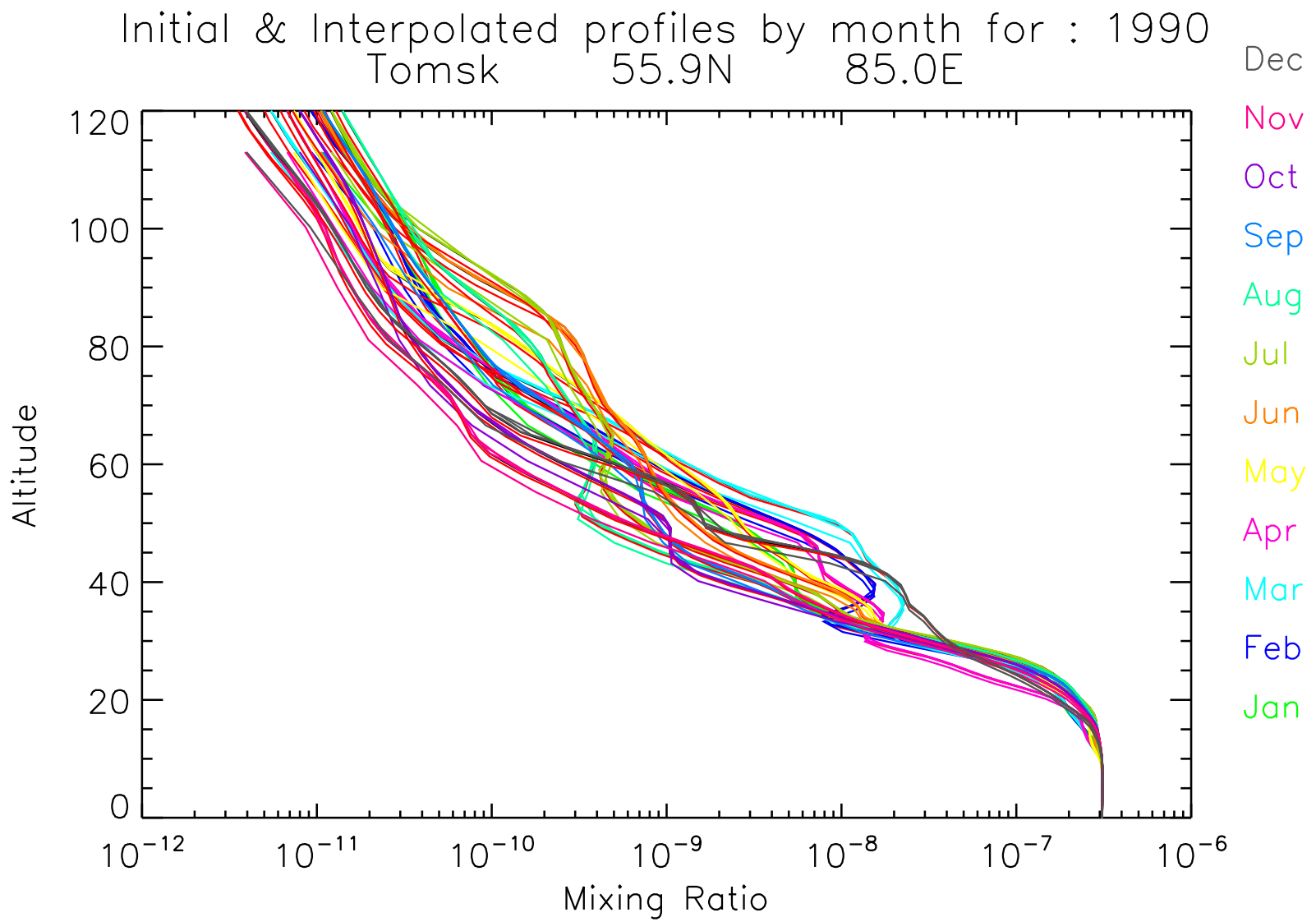
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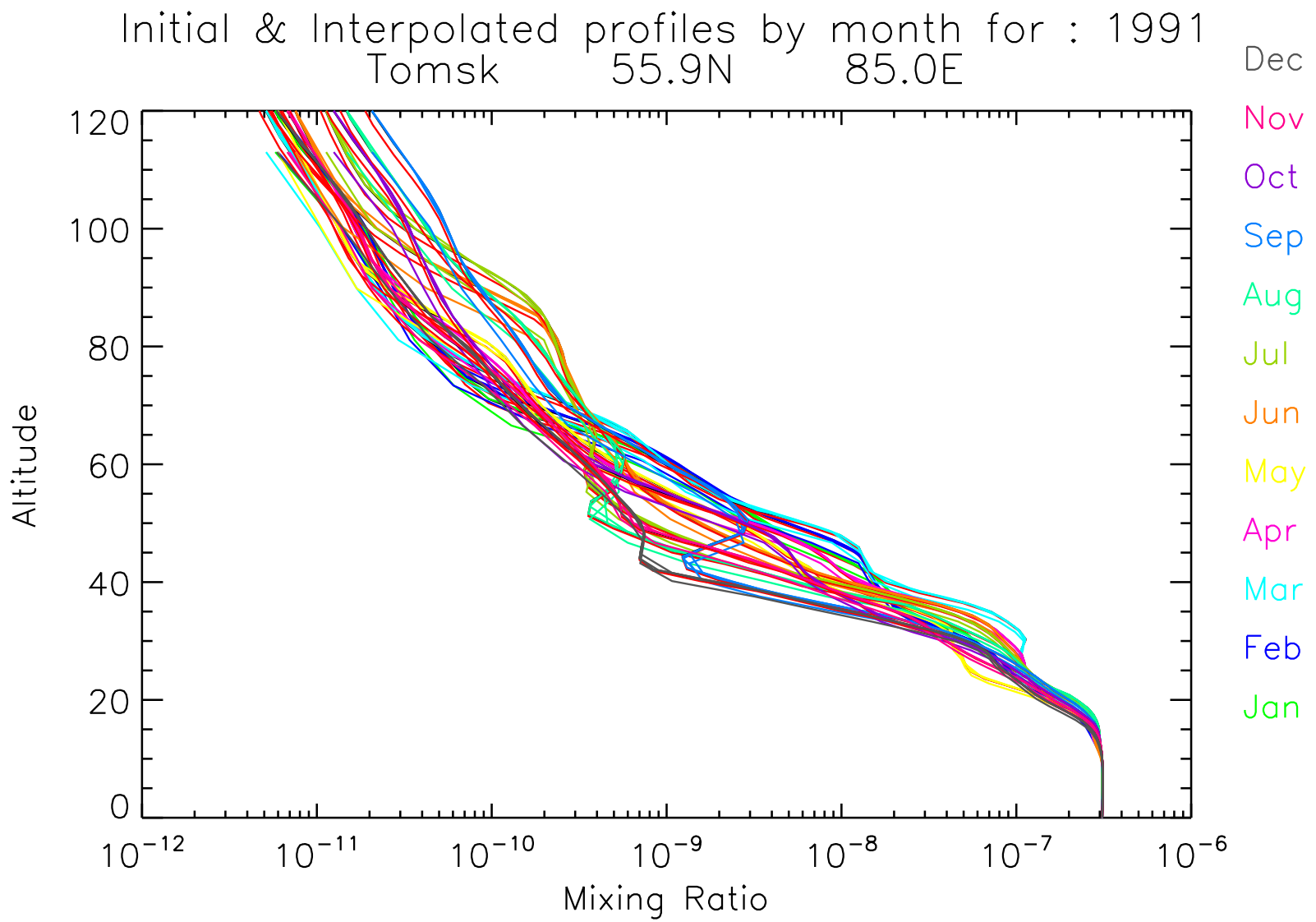
Initial & Interpolated profiles by month for : 1991
Tomsk 55.9N 85.0E
Altitude
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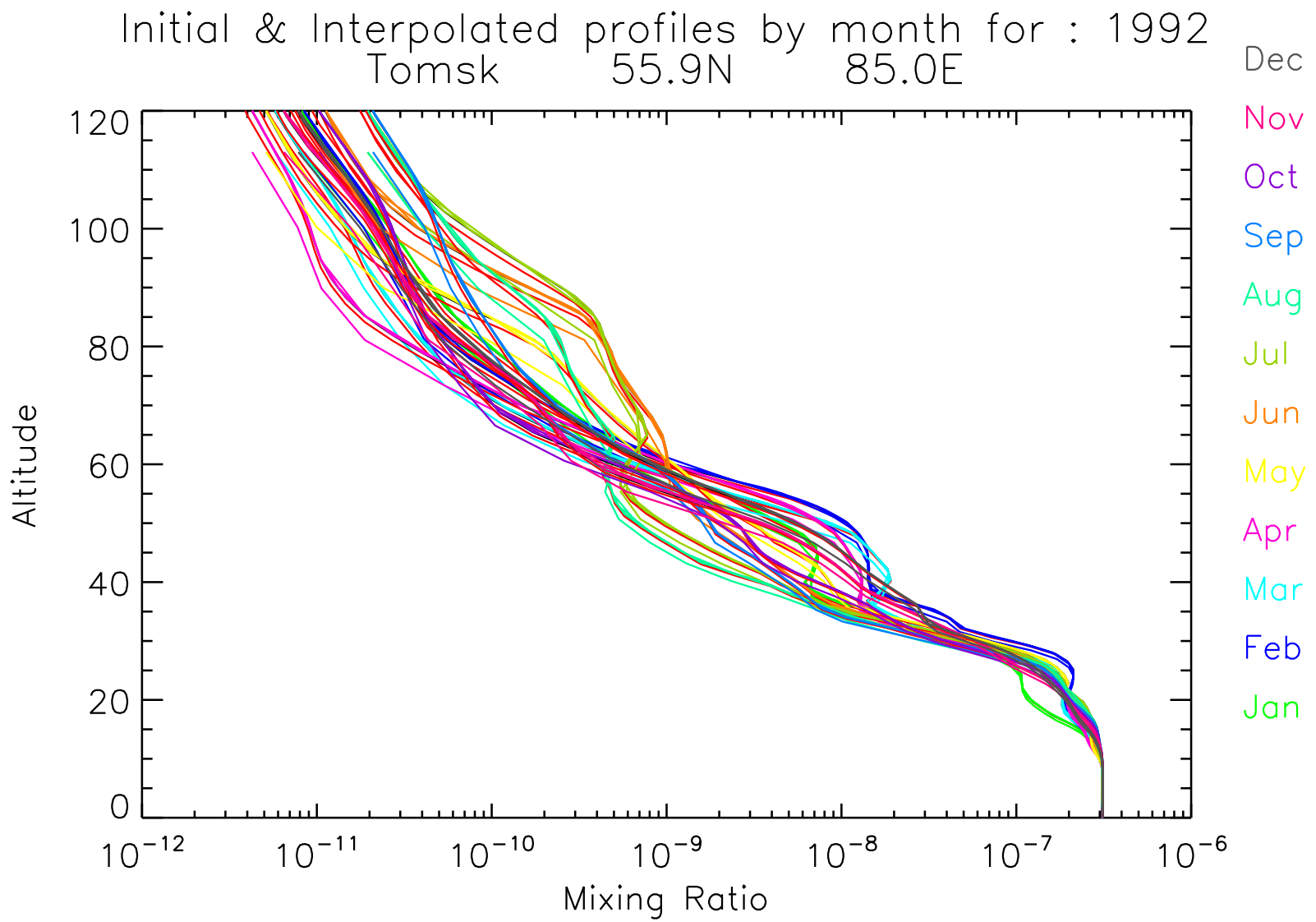
Initial & Interpolated profiles by month for : 1992
Tomsk 55.9N 85.0E
Altitude
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Mixing Ratio
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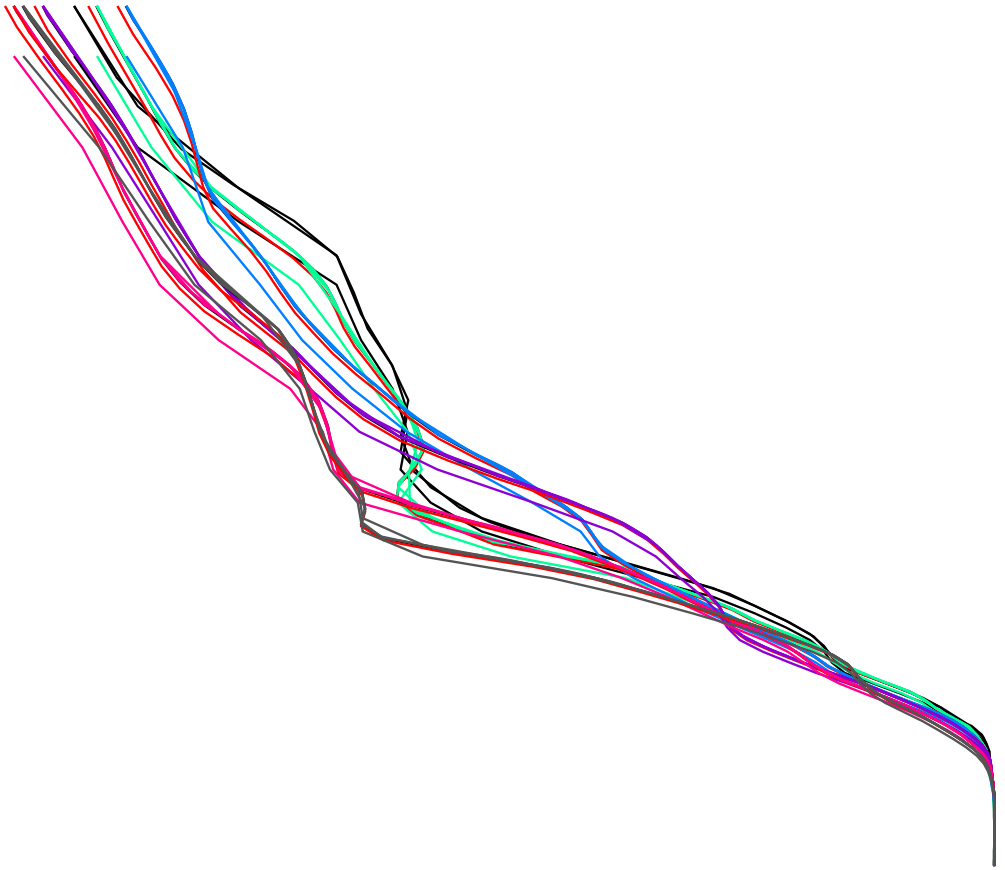
Initial & Interpolated profiles by month for : 1



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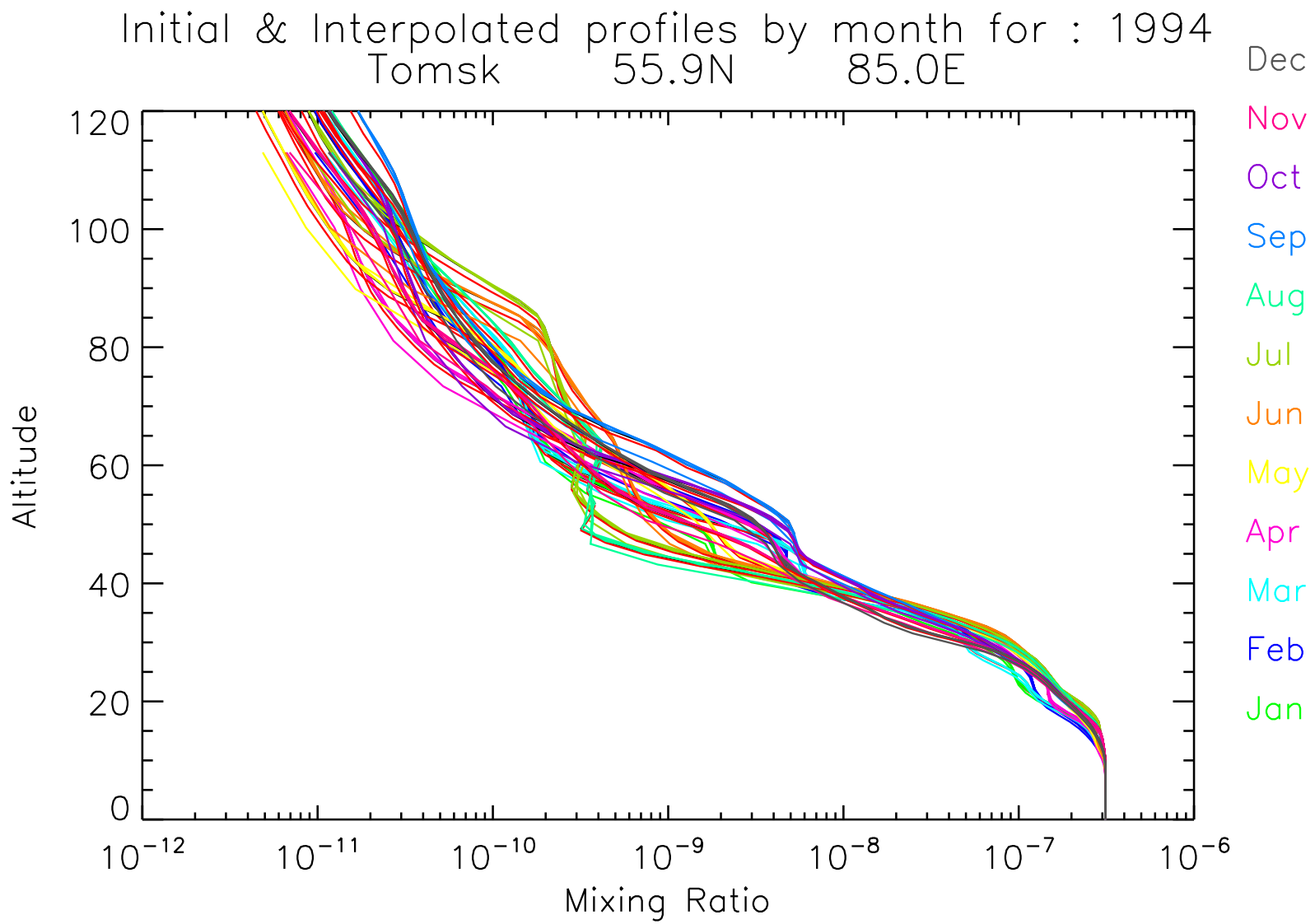
Initial & Interpolated profiles by month for : 1994
Tomsk 55.9N 85.0E
Altitude
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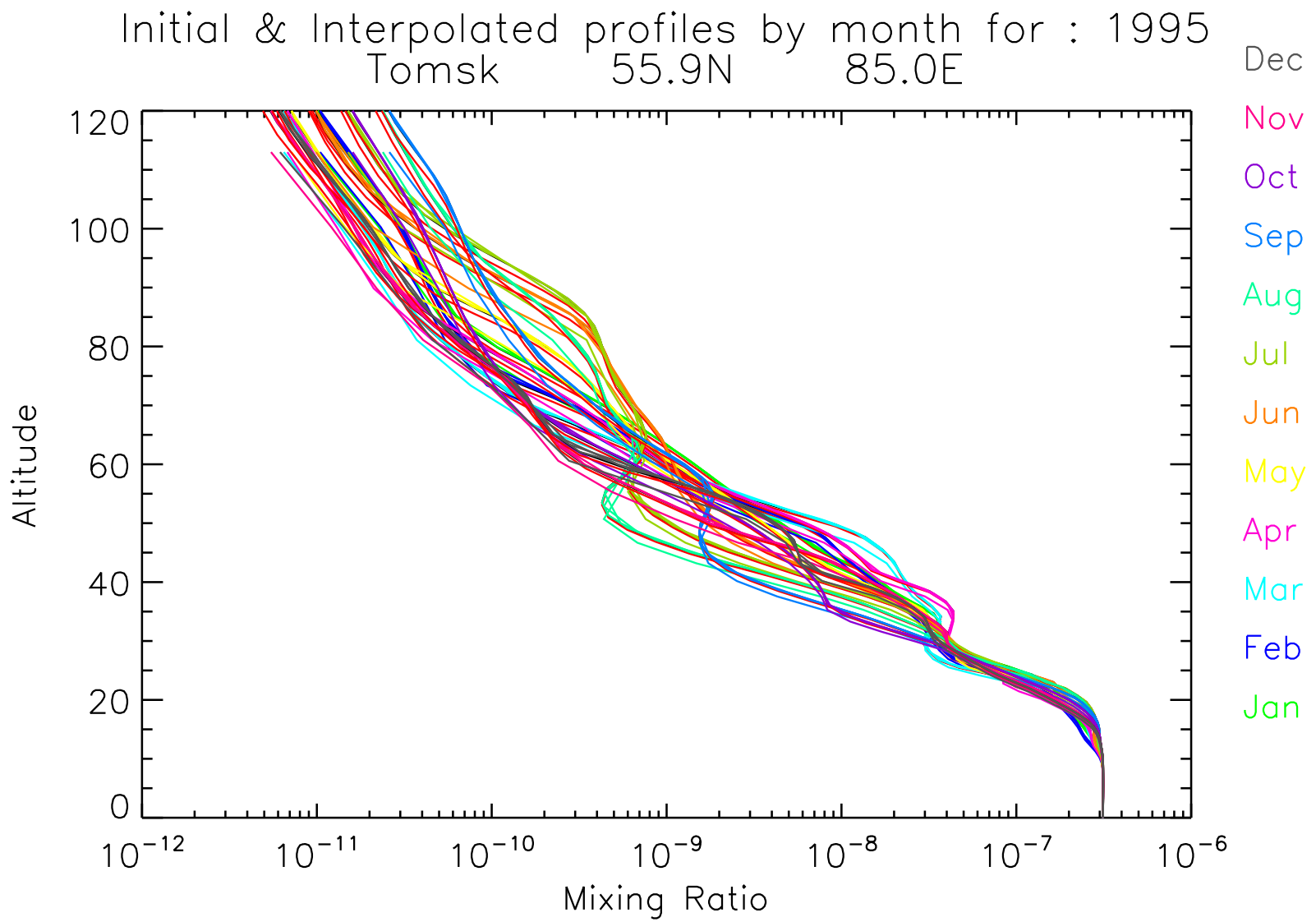
Initial & Interpolated profiles by month for : 1995
Tomsk 55.9N 85.0E
Altitude
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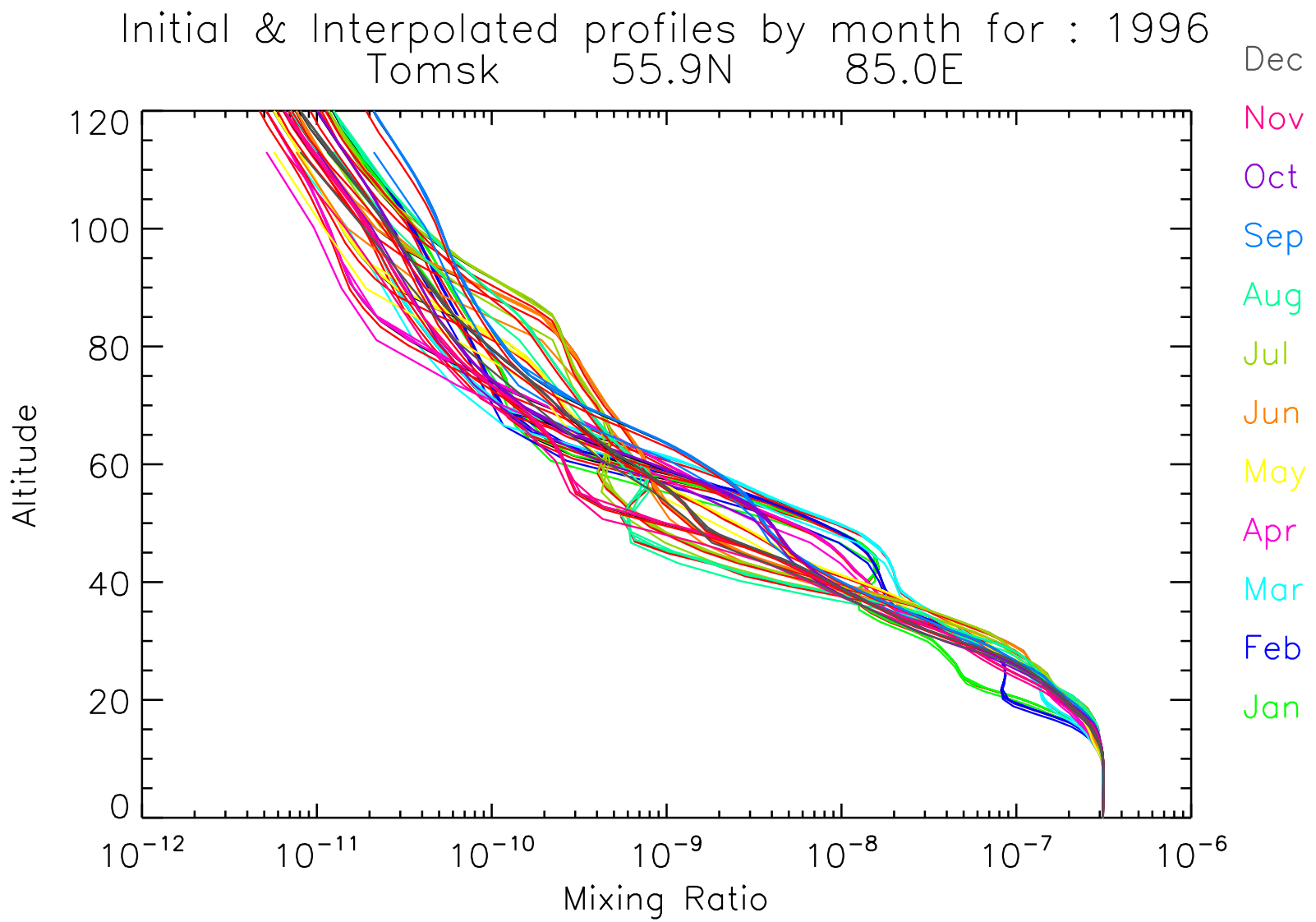
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Altitude
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Mixing Ratio
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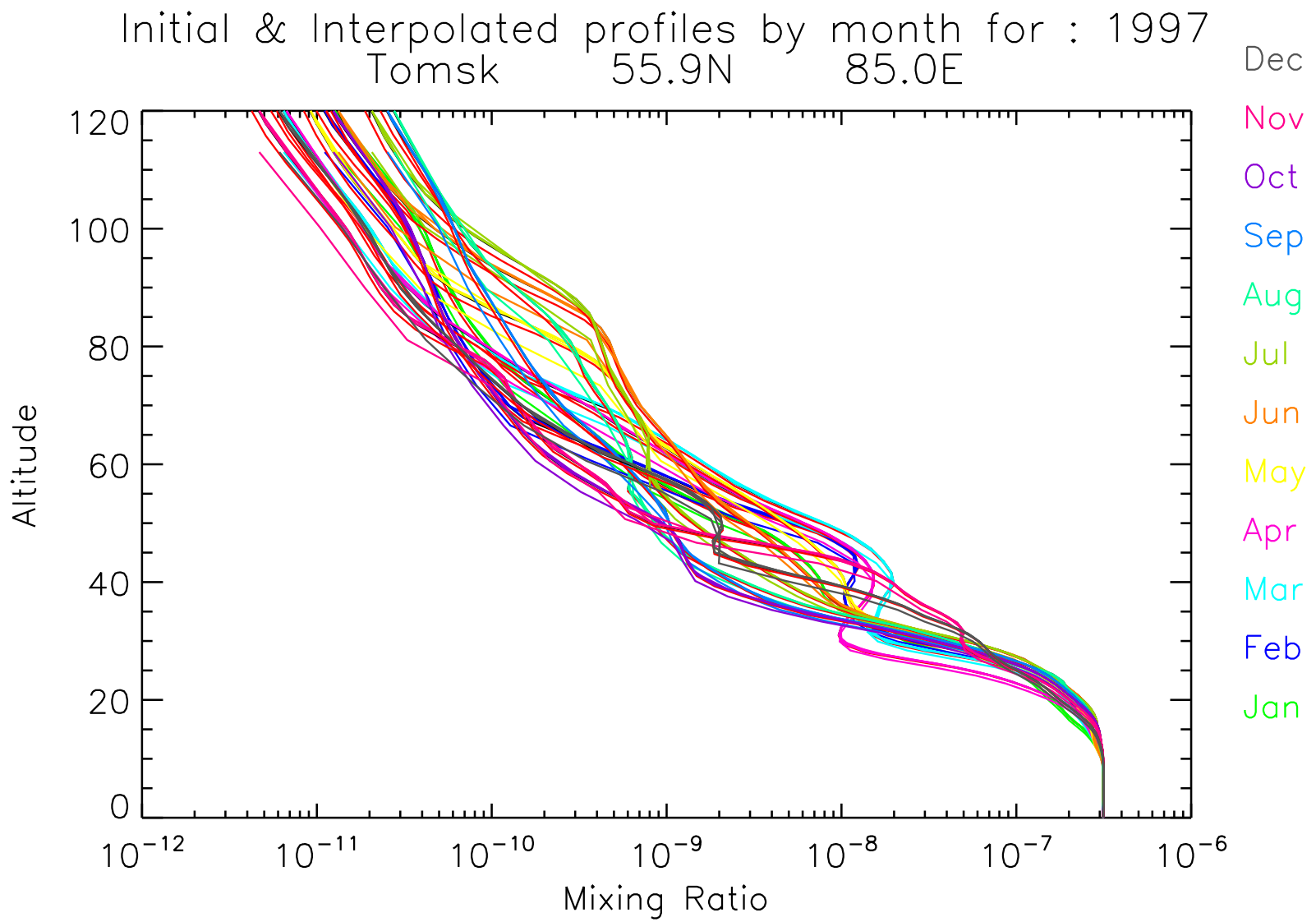
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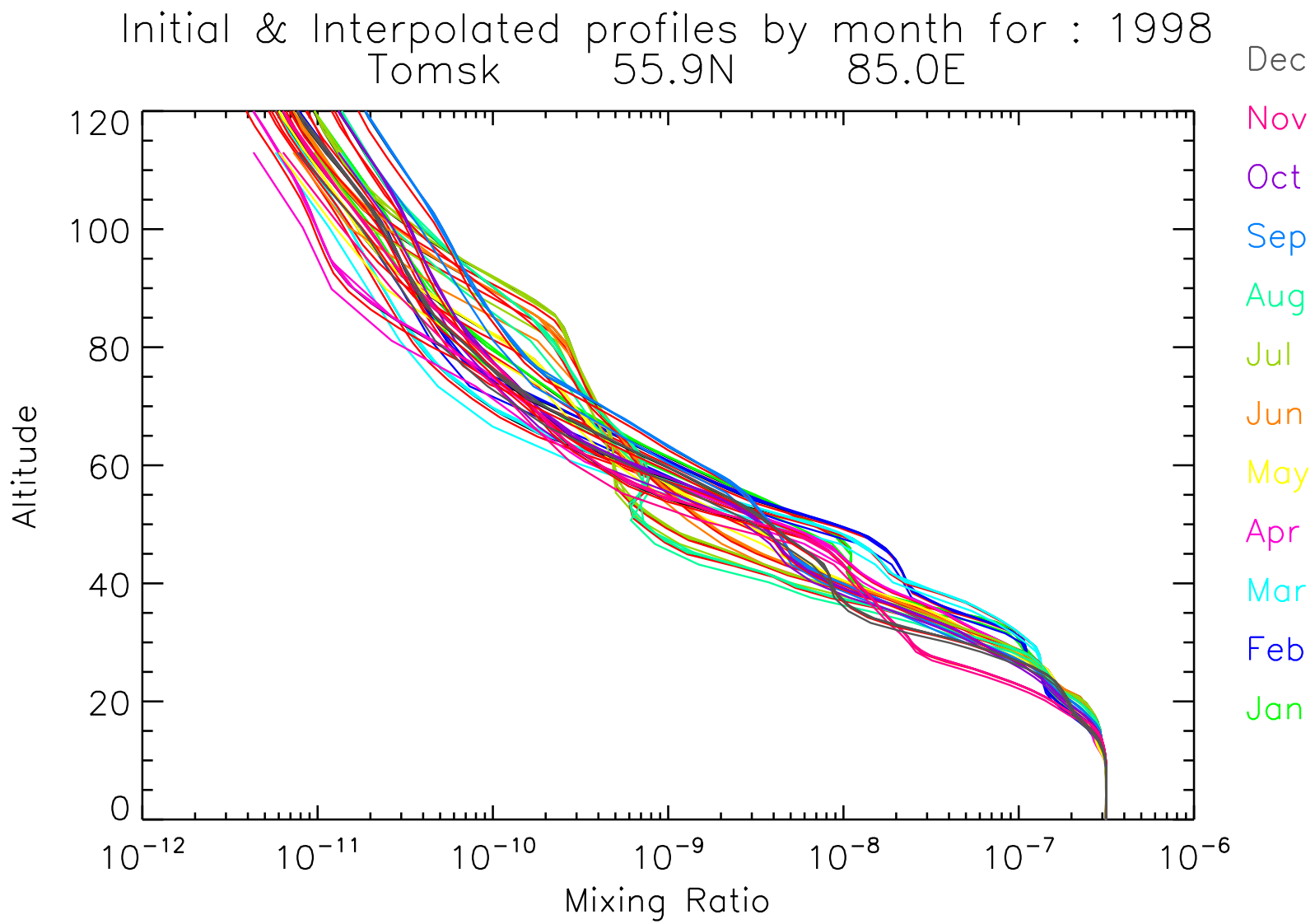
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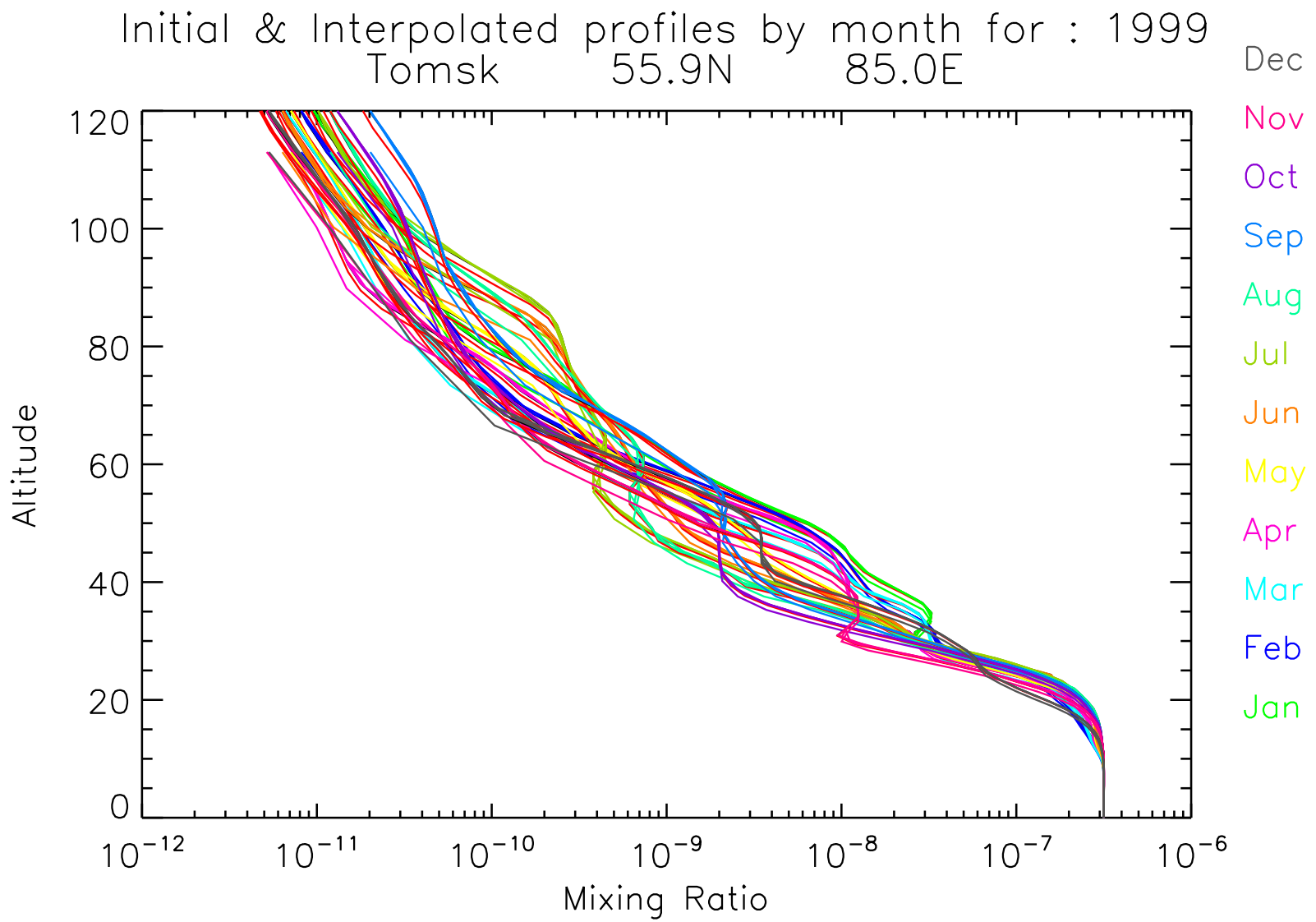
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Altitude
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Mixing Ratio
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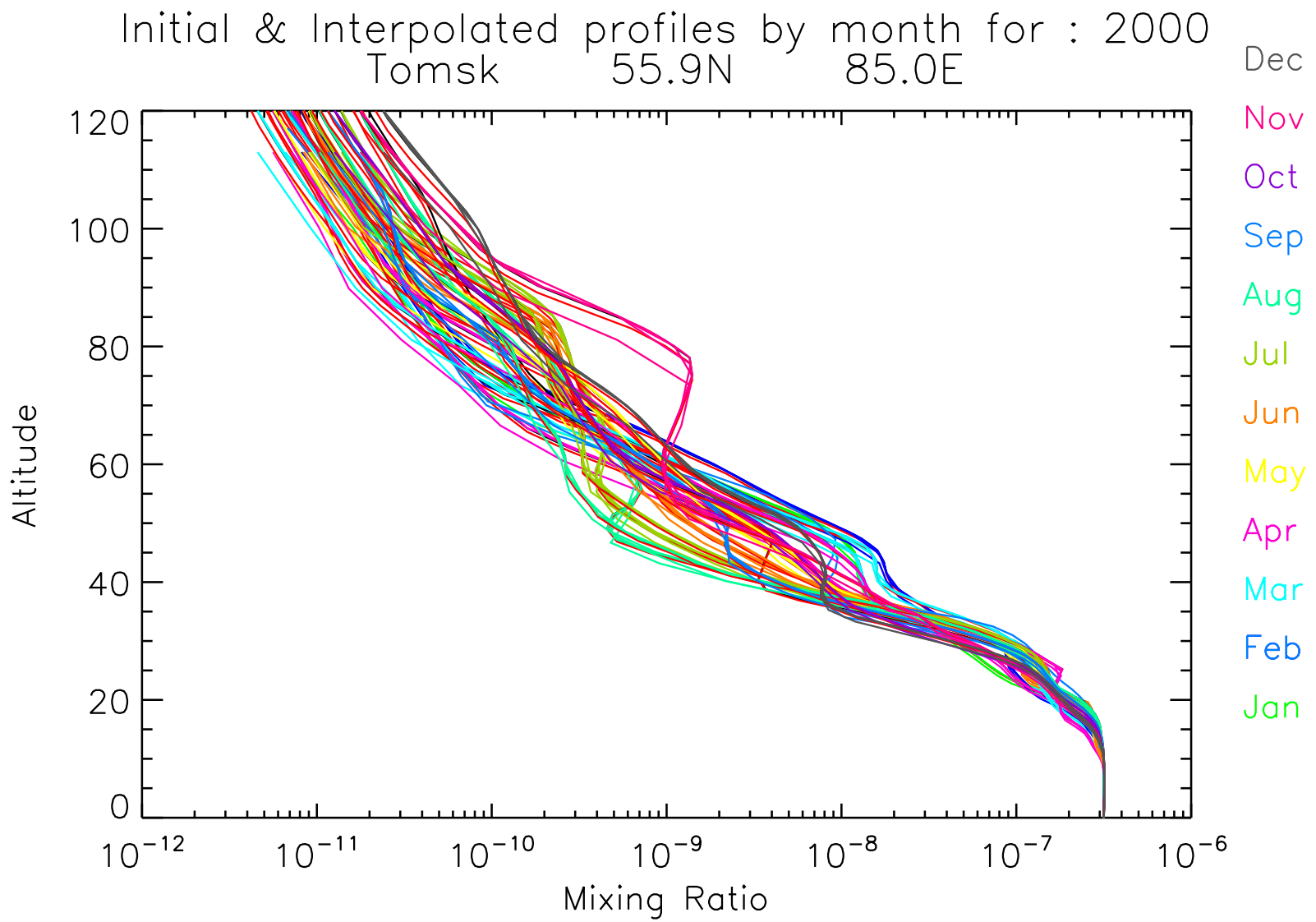
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Altitude
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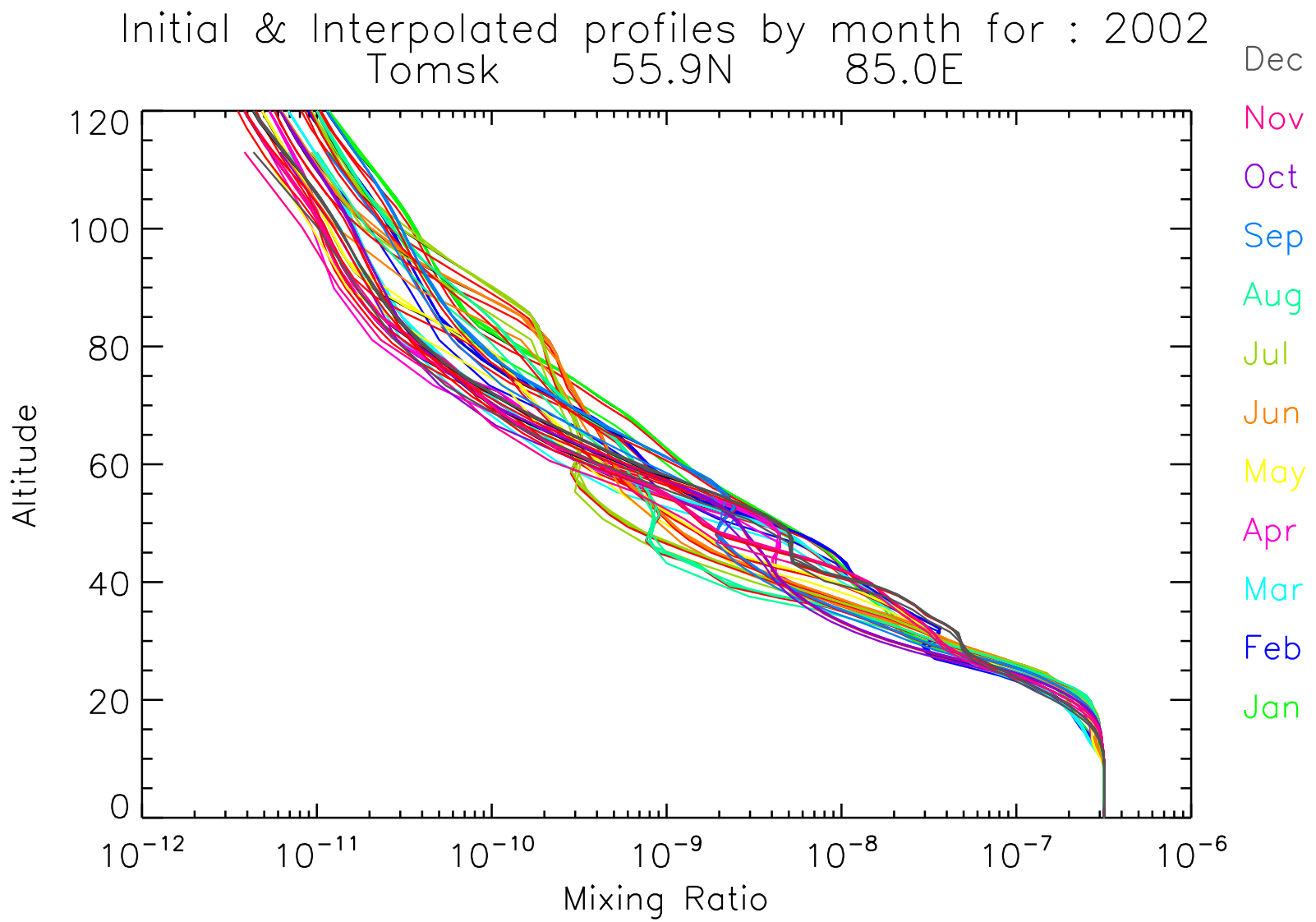
Initial & Interpolated profiles by month for : 2002
Tomsk 55.9N 85.0E
Altitude
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Mixing Ratio
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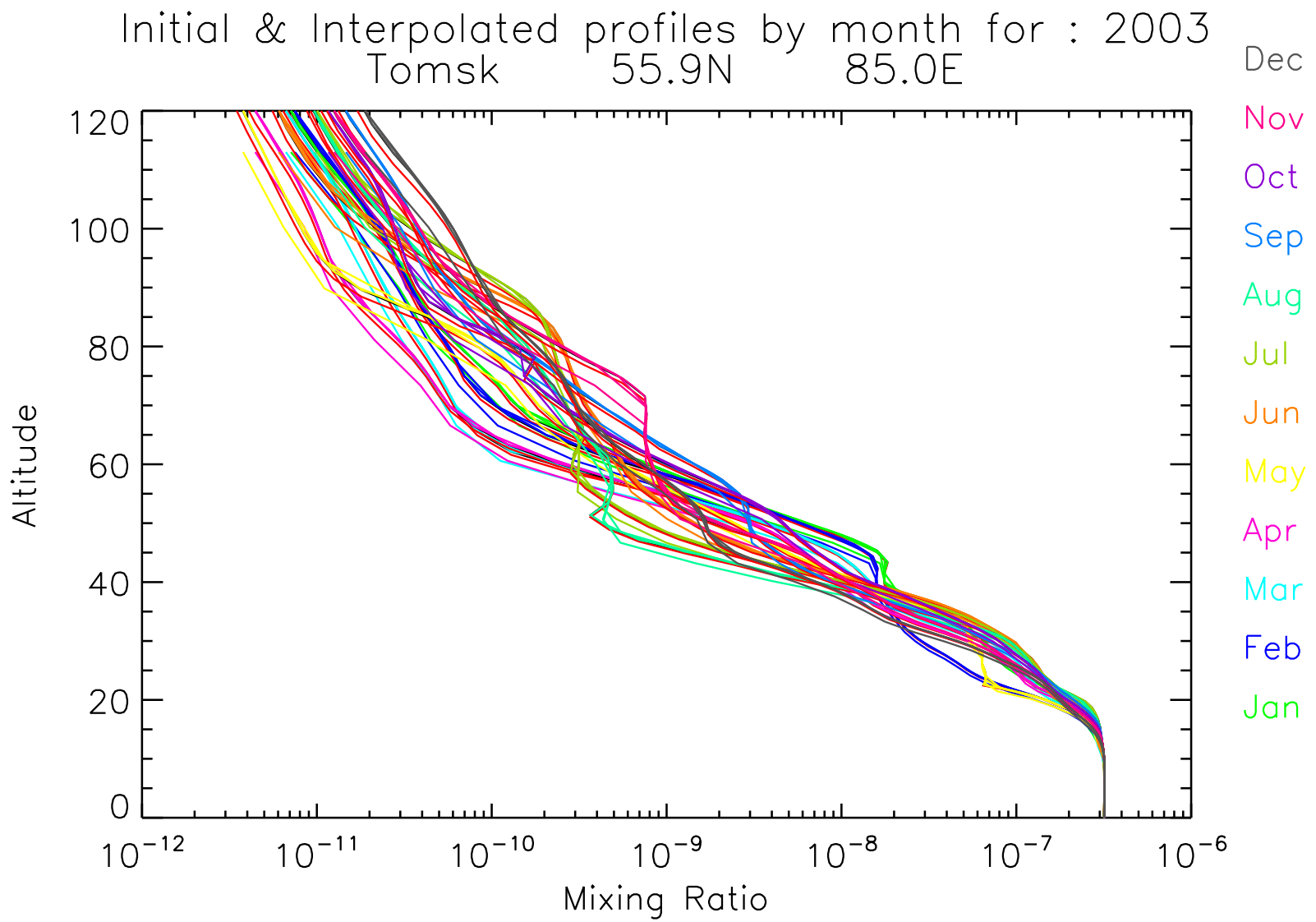
Initial & Interpolated profiles by month for : 2003
Tomsk 55.9N 85.0E
Altitude
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Mixing Ratio
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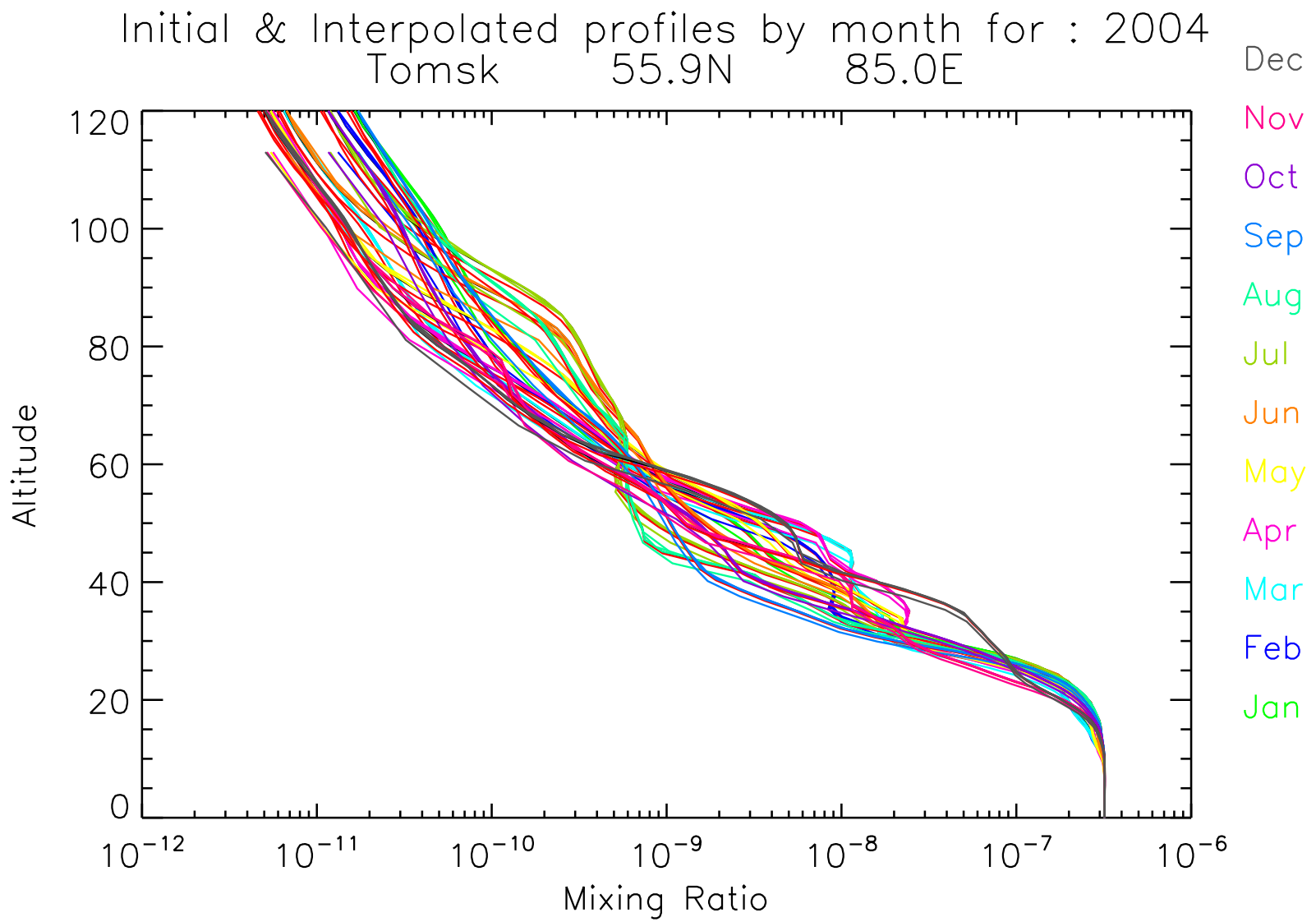
Initial & Interpolated profiles by month for : 2004
Tomsk 55.9N 85.0E
Altitude
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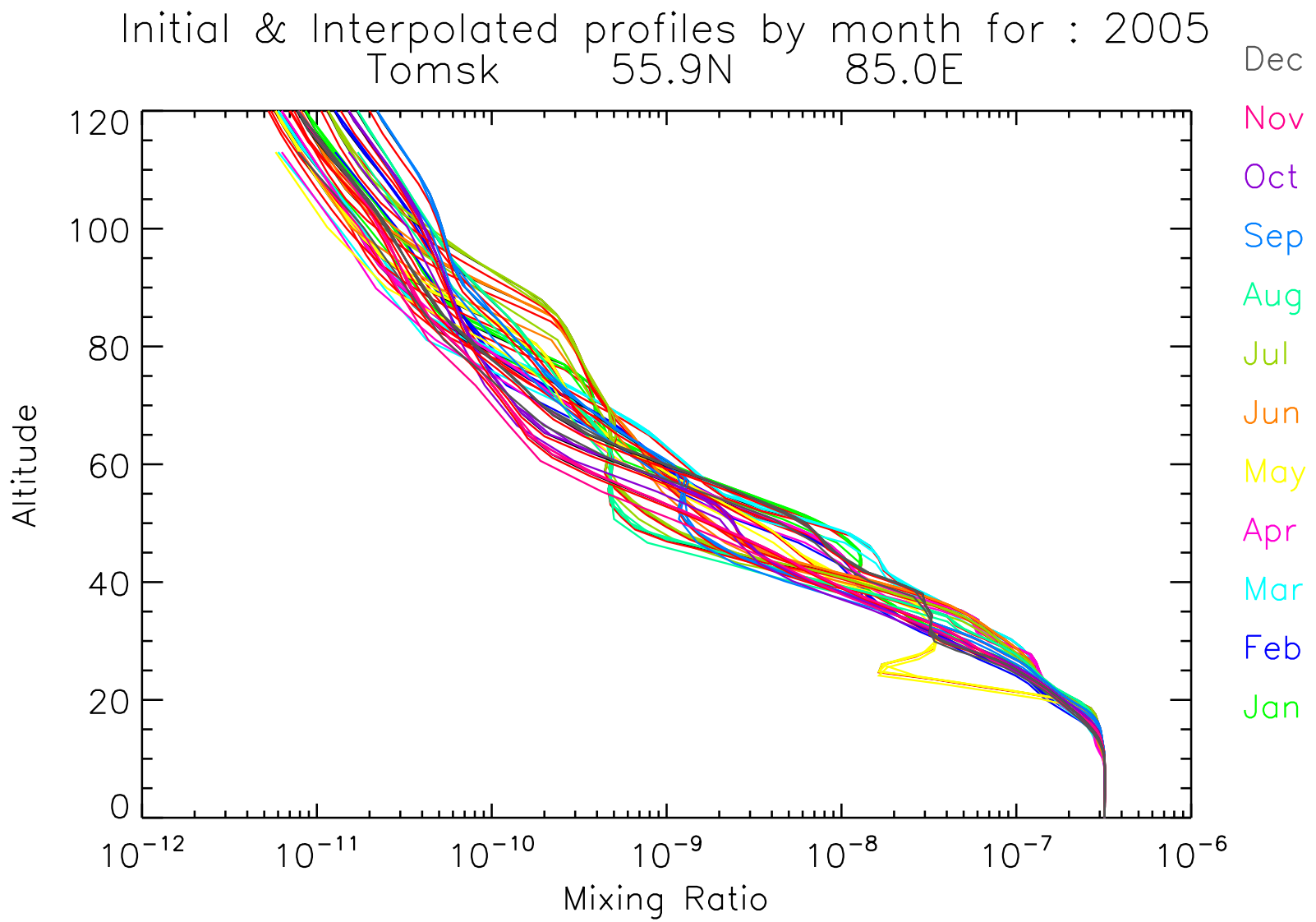
Initial & Interpolated profiles by month for : 2005
Tomsk 55.9N 85.0E
Altitude
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Mixing Ratio
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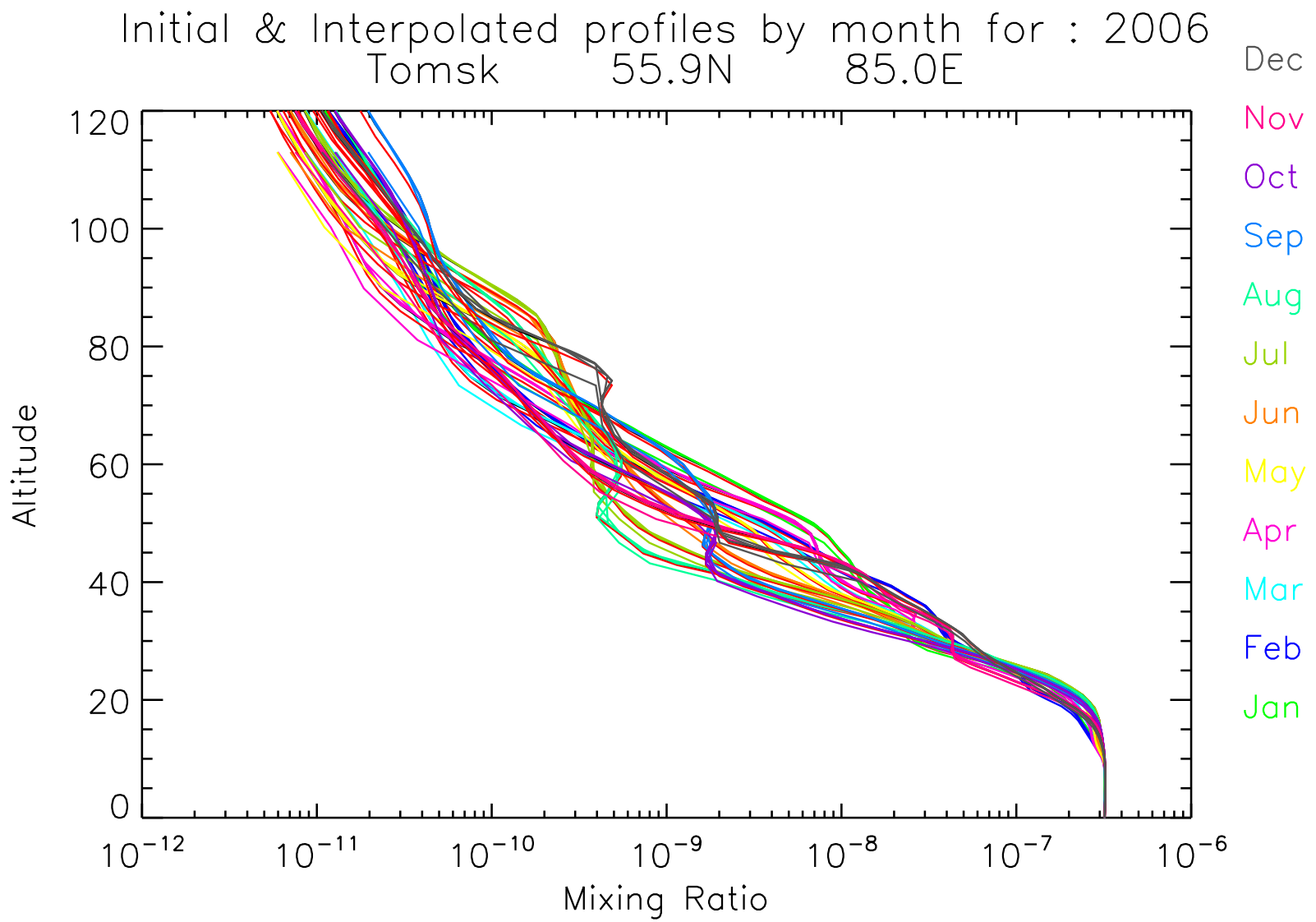
Initial & Interpolated profiles by month for : 2006
Tomsk 55.9N 85.0E
Altitude
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Mixing Ratio
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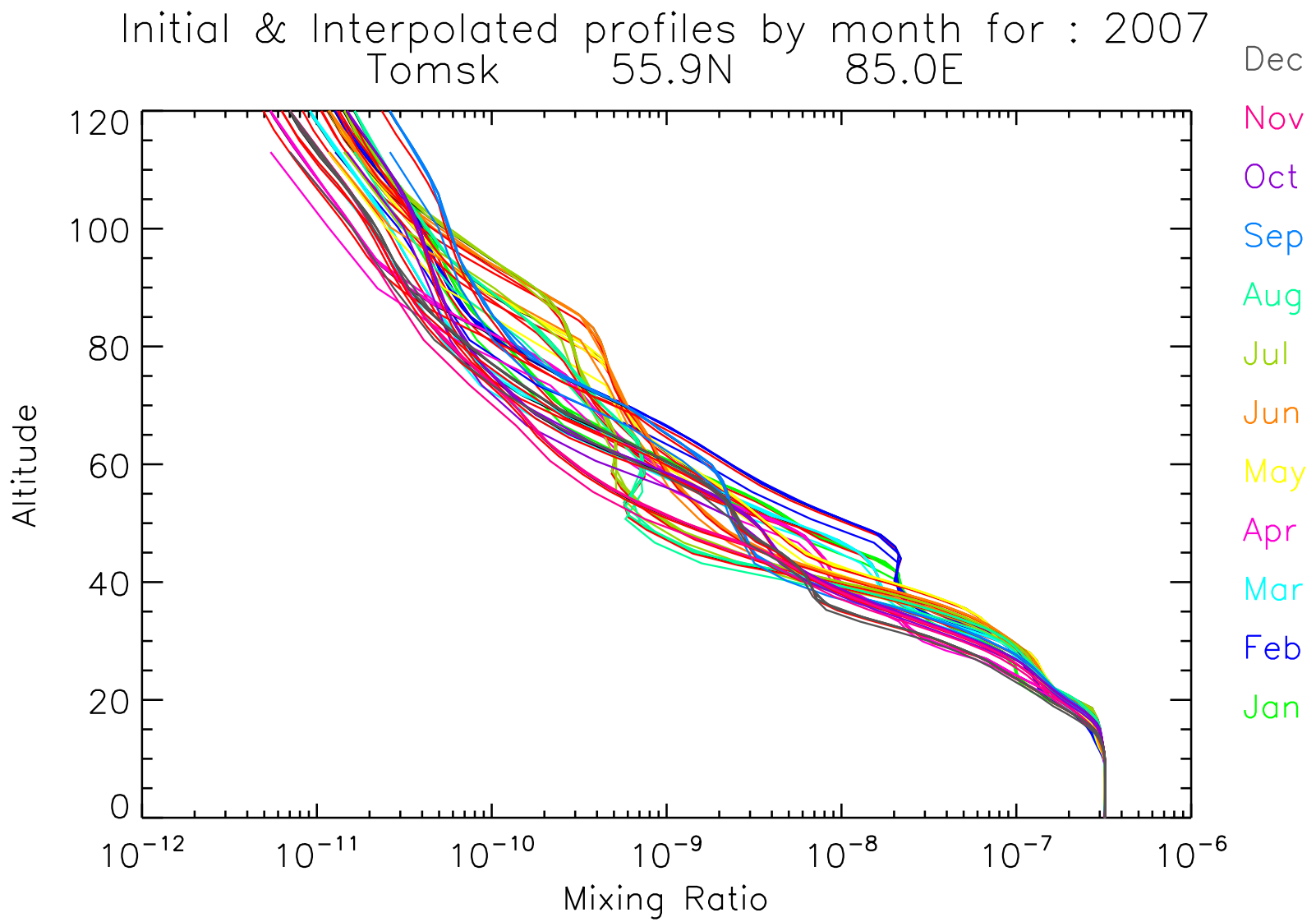
Initial & Interpolated profiles by month for : 2007
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Altitude
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Mixing Ratio
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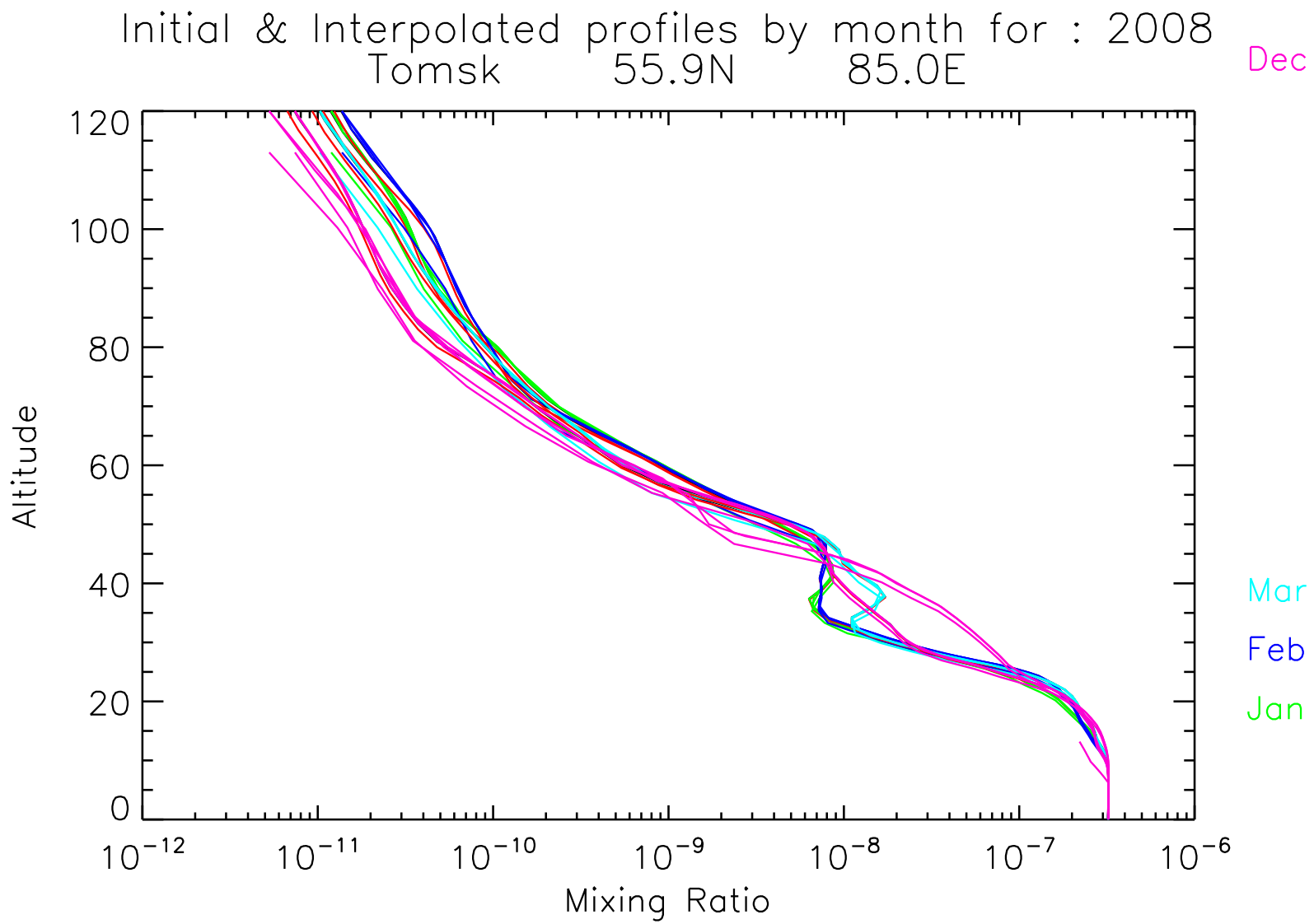
Initial & Interpolated profiles by month for : 2008
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Altitude
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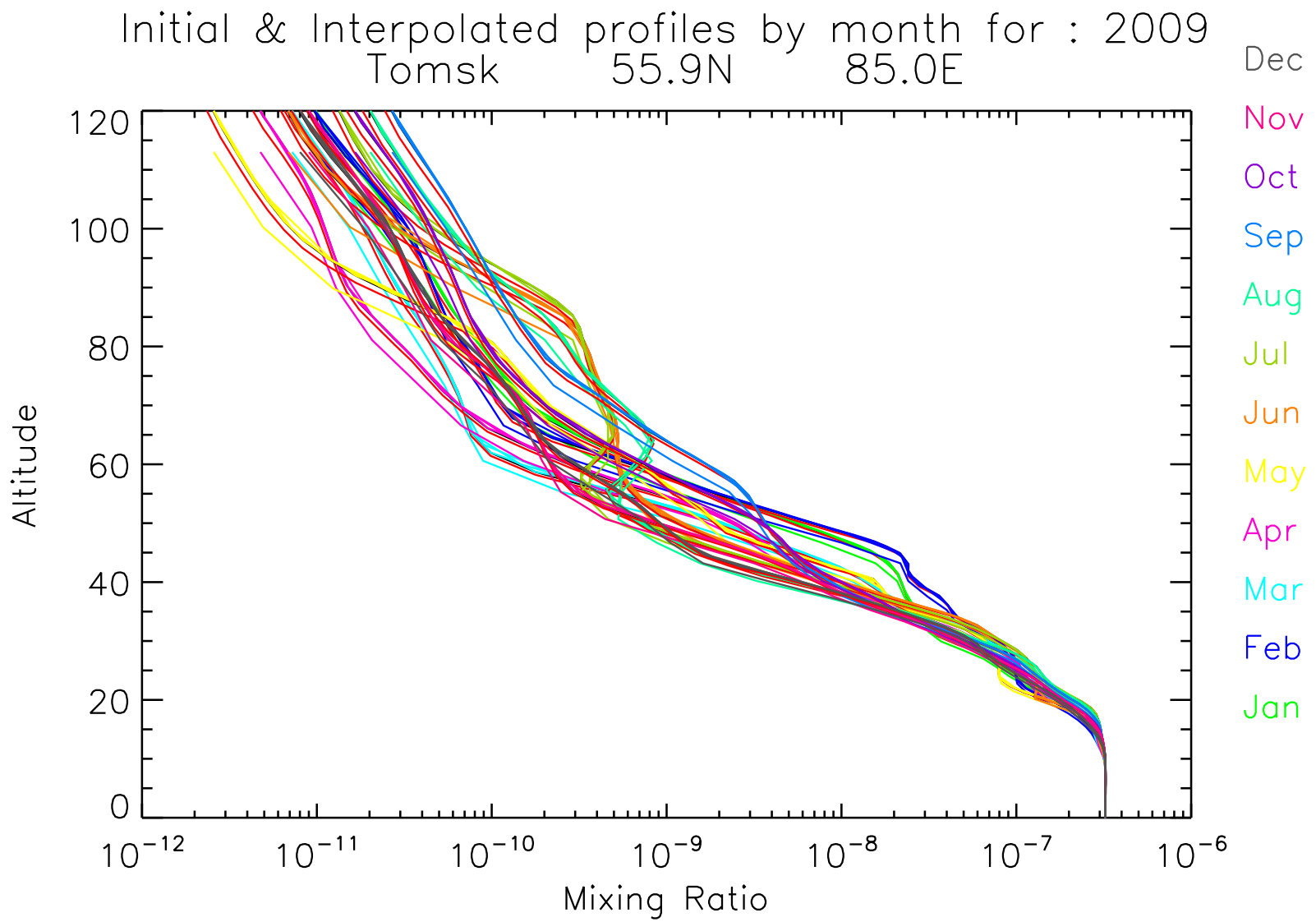
Mixing Ratio


Initial & Interpolated profiles by month for : 2009
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Mixing Ratio
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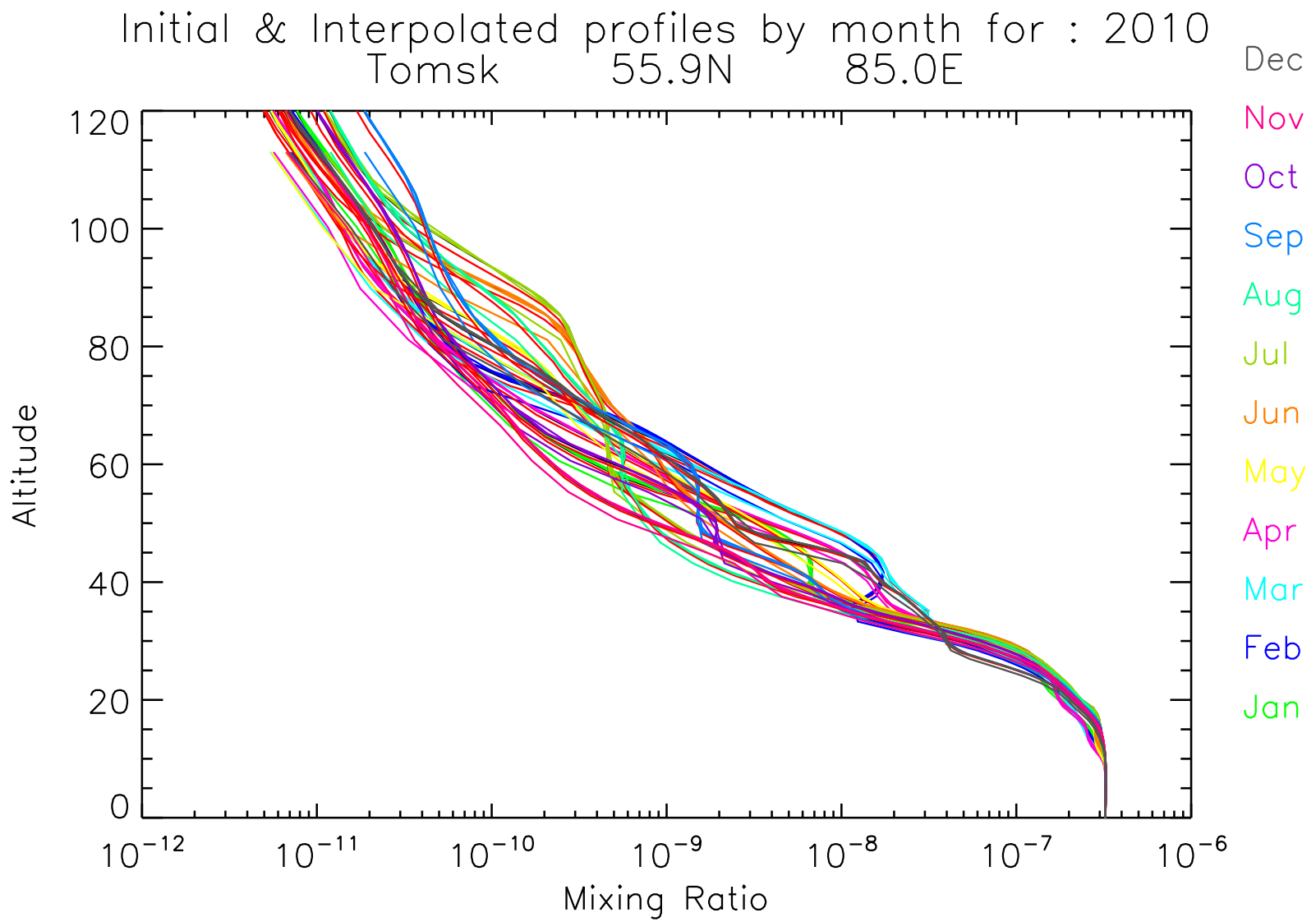
Initial & Interpolated profiles by month for : 2010
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Mixing Ratio
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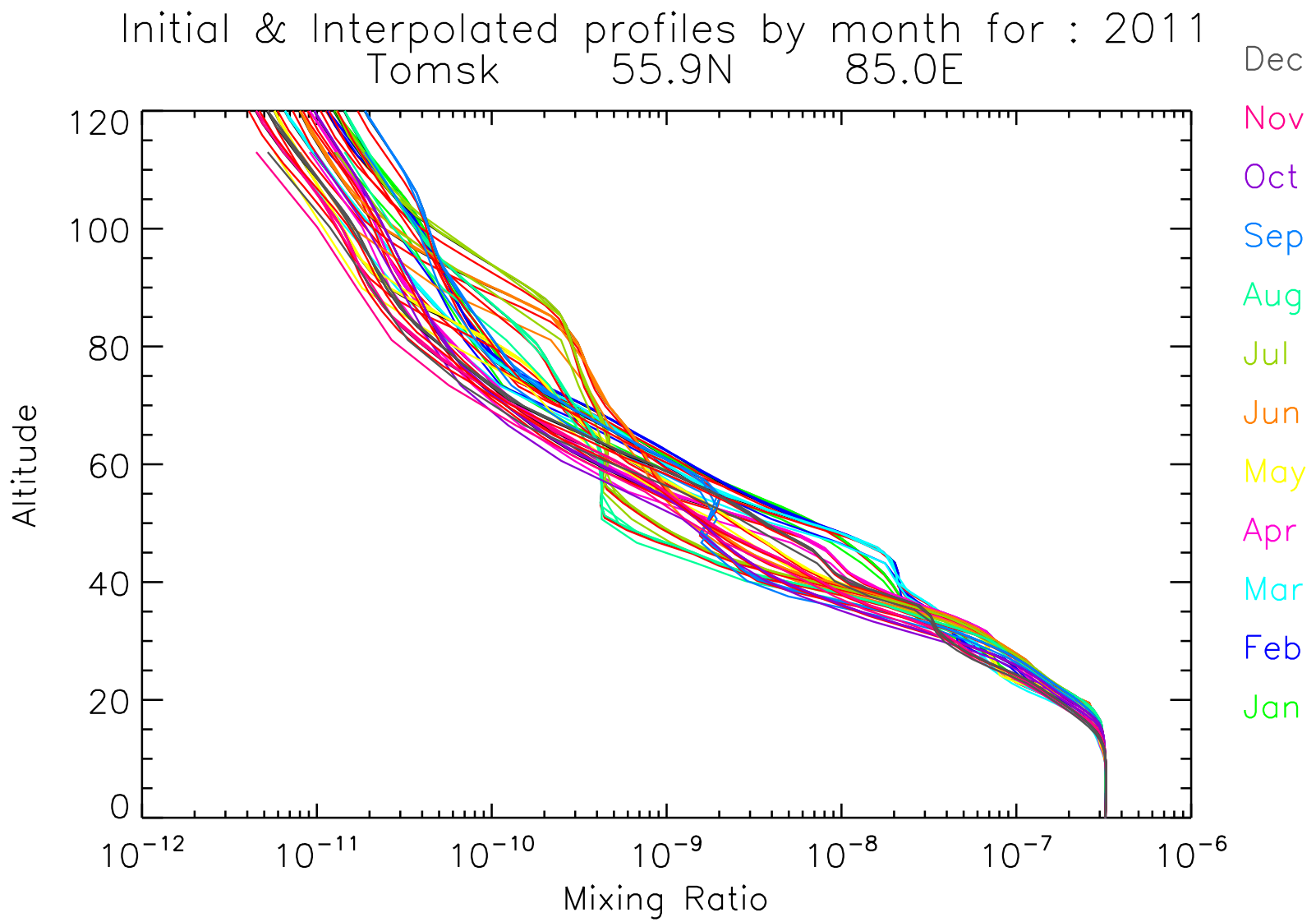
Initial & Interpolated profiles by month for : 2011
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
Oct
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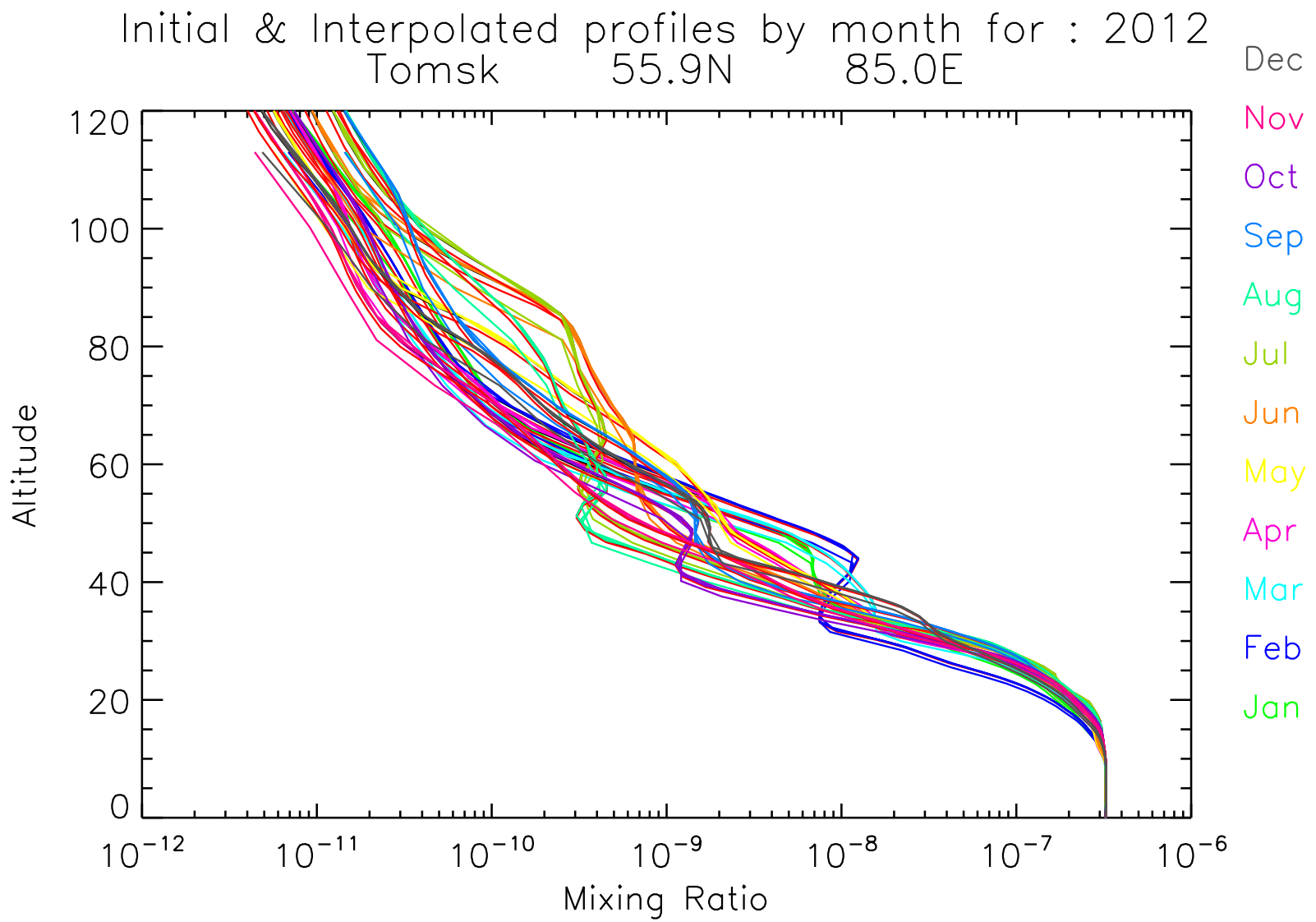
Jul
Jun
May
Apr
Mar
Feb
Jan


Initial & Interpolated profiles by month for : 2012
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
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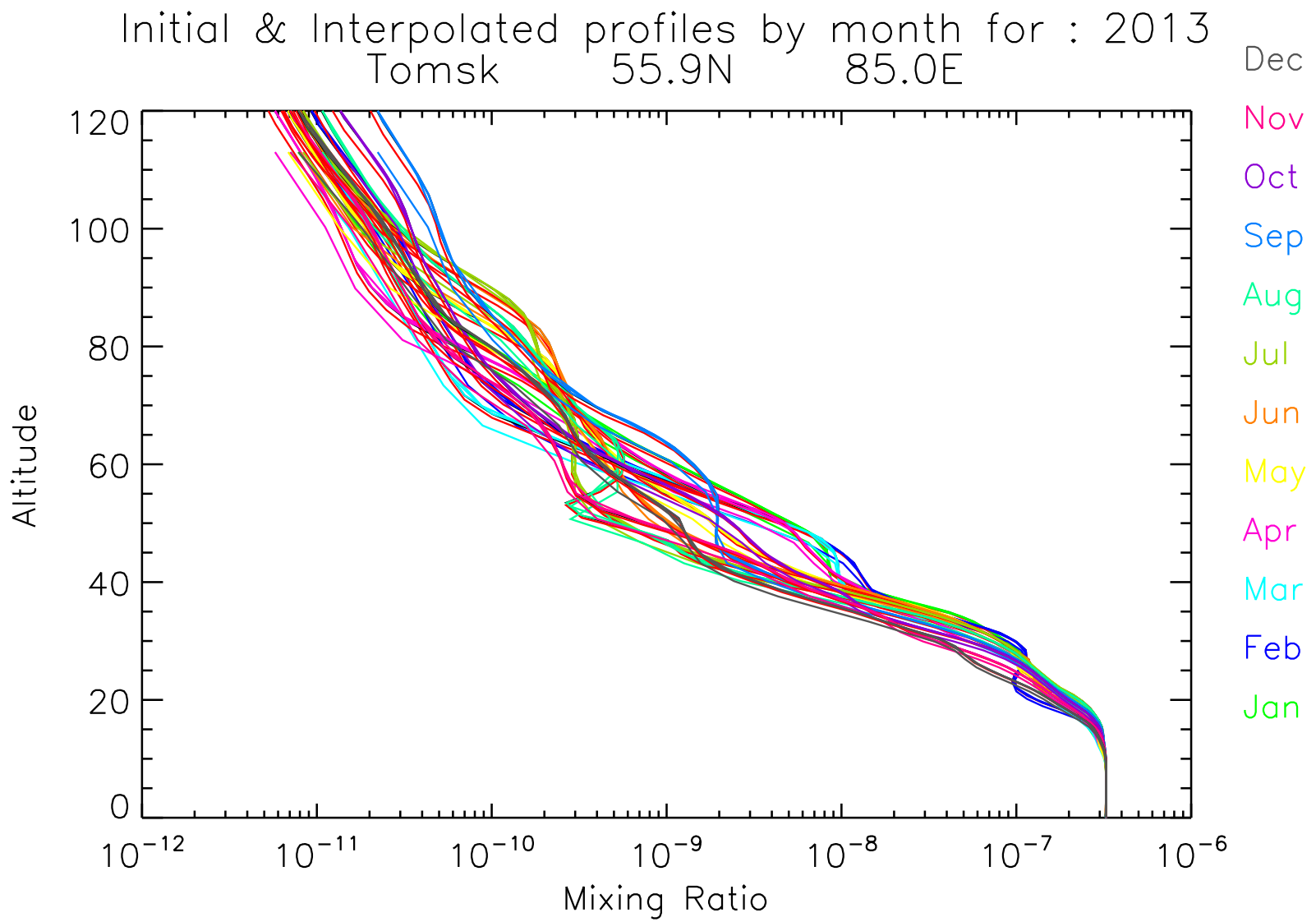
Apr
Mar
Feb
Jan


Initial & Interpolated profiles by month for : 2013
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
Oct
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Apr
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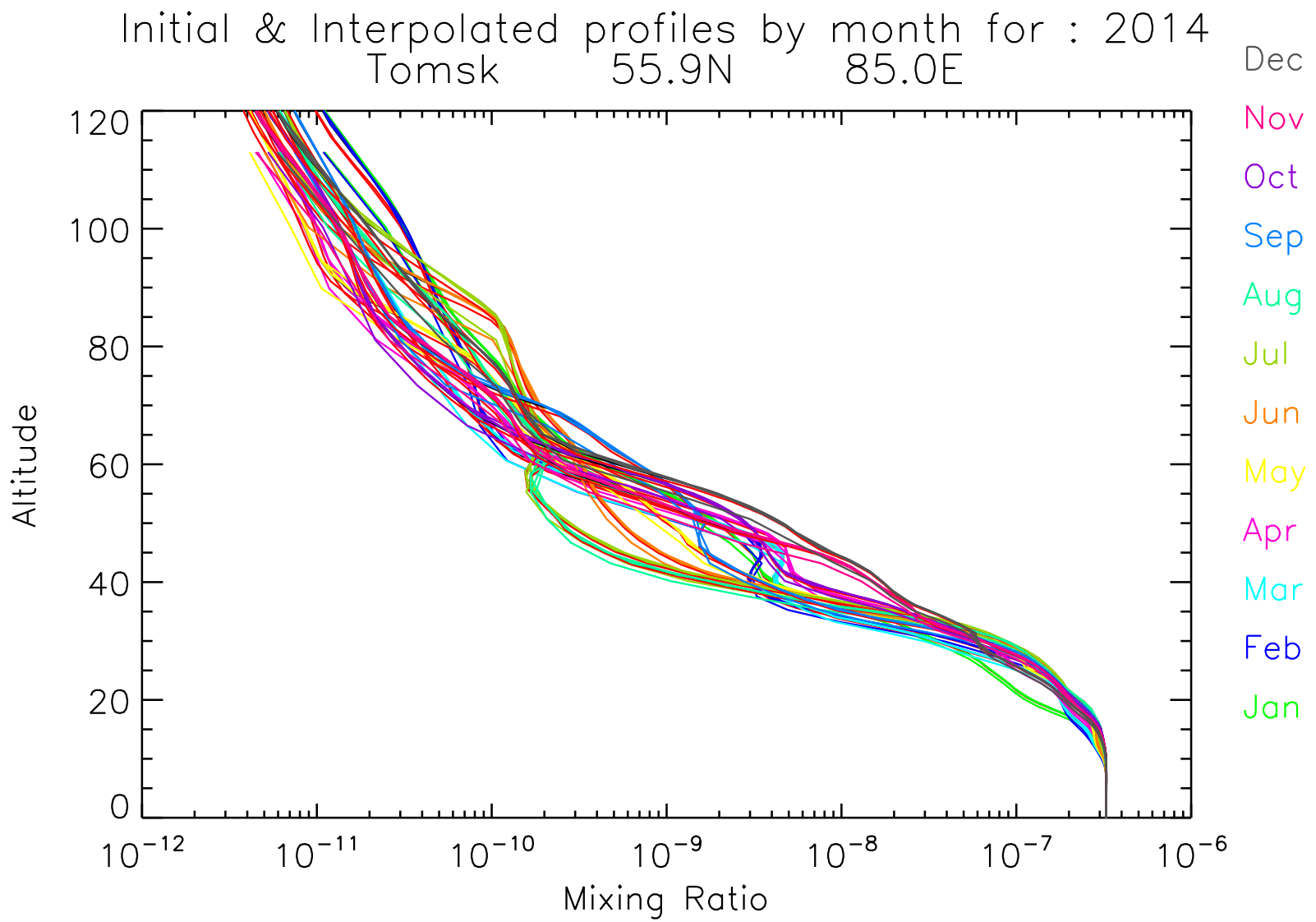
Feb
Jan


Initial & Interpolated profiles by month for : 2014
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
Oct
Sep
Aug
Jul
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May
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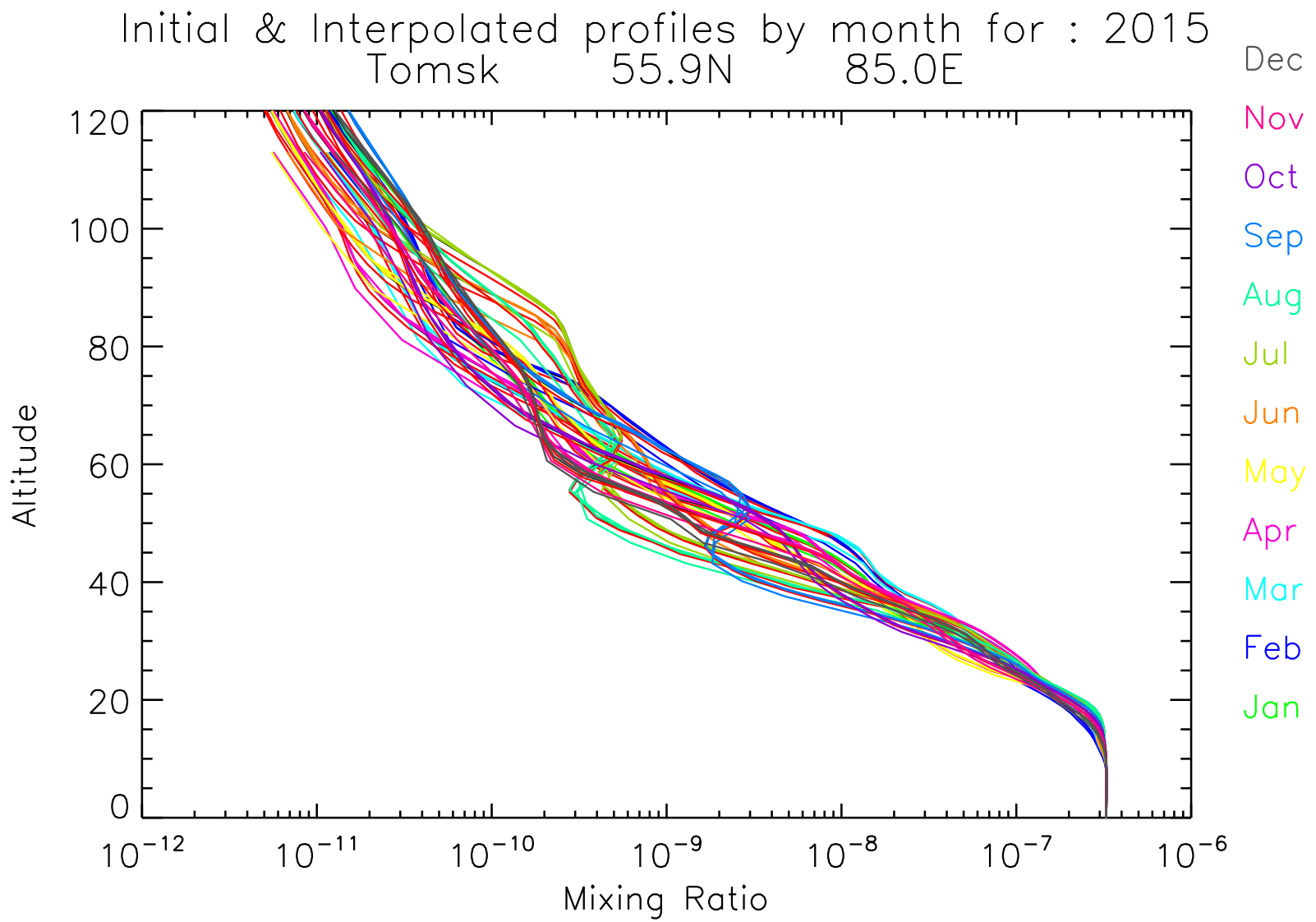
Feb
Jan


Initial & Interpolated profiles by month for : 2015
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
Oct
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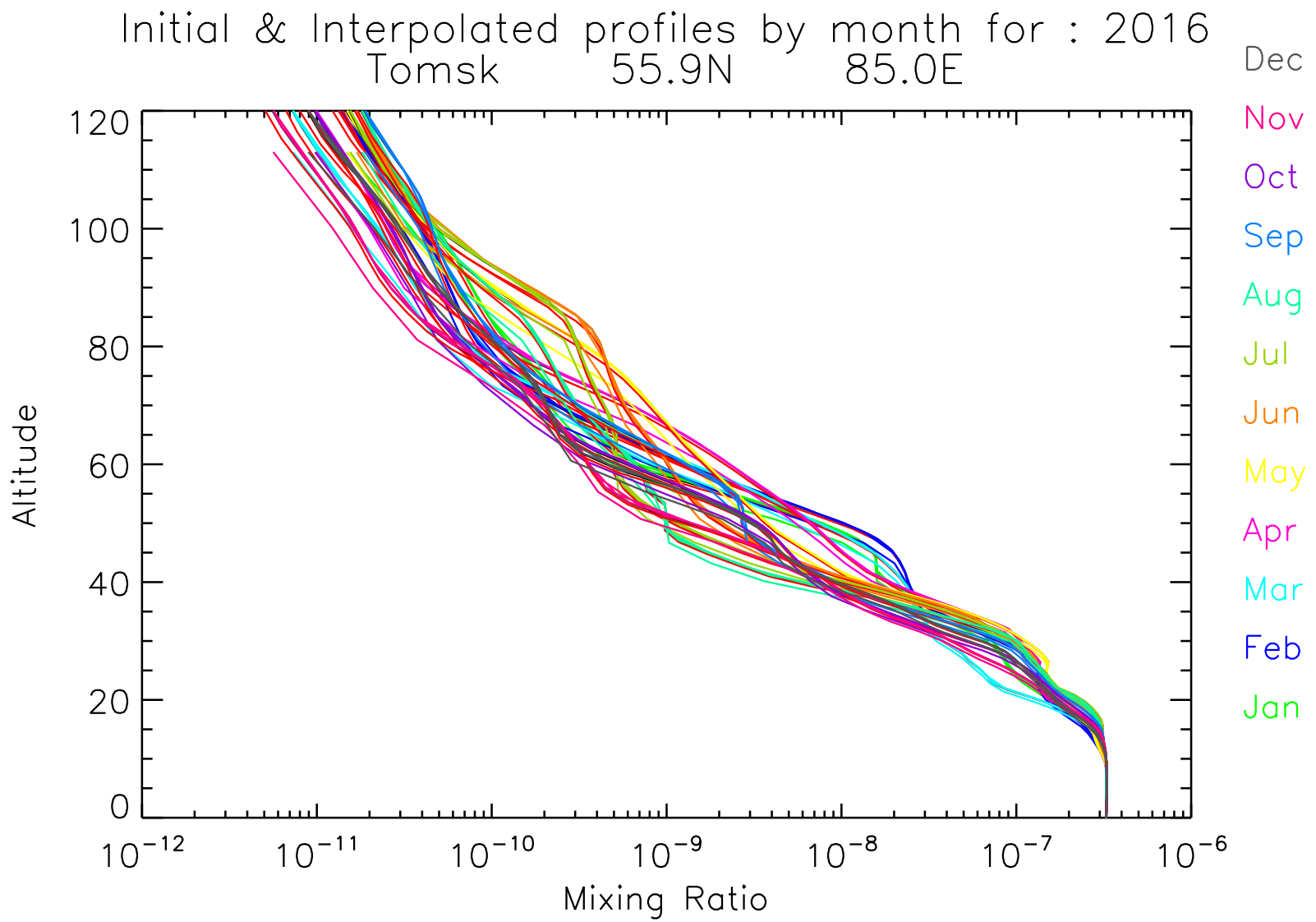
Aug
Jul
Jun
May
Apr
Mar
Feb
Jan


Initial & Interpolated profiles by month for : 2016
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
Oct
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May
Apr
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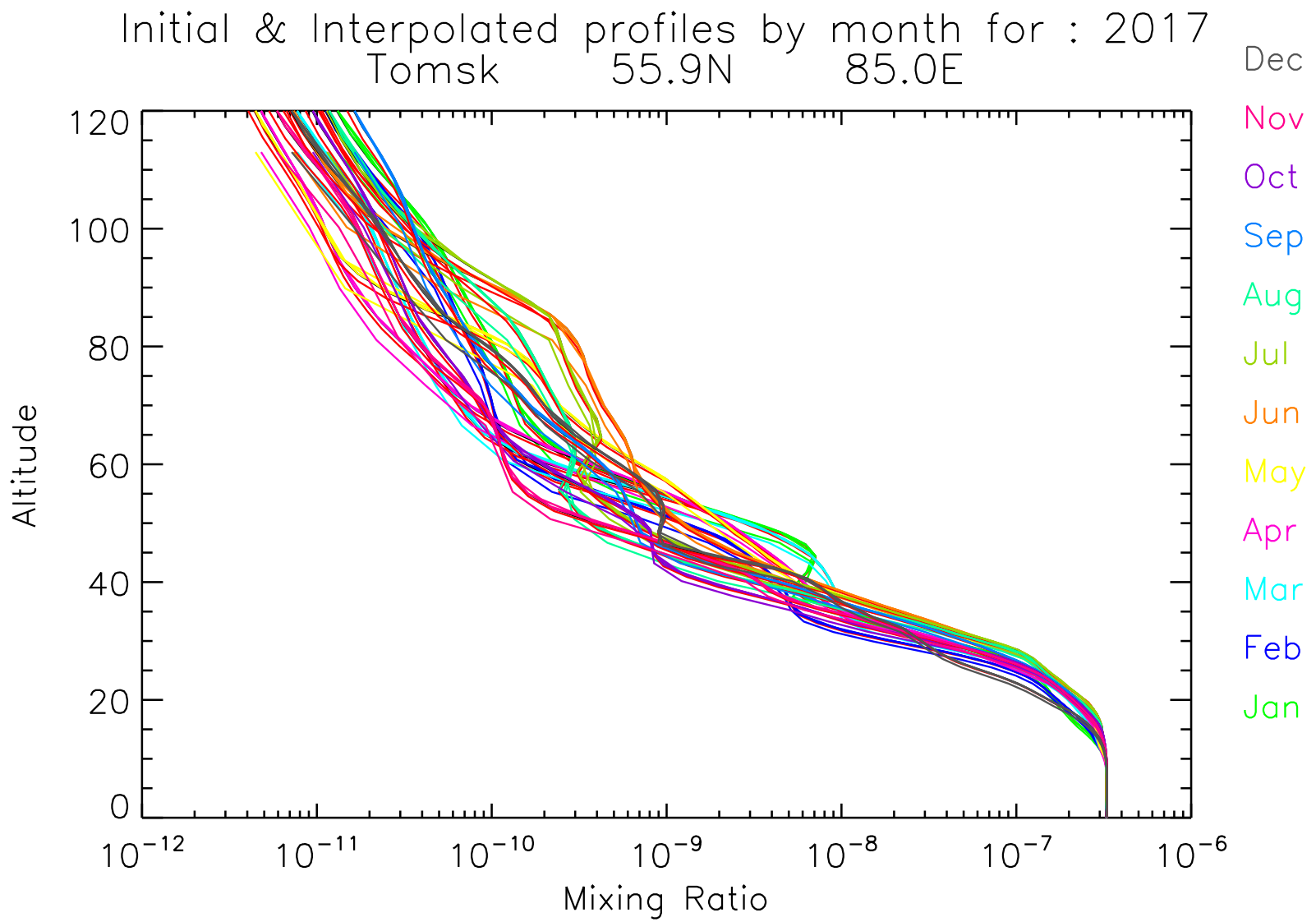
Feb
Jan


Initial & Interpolated profiles by month for : 2017
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
Oct
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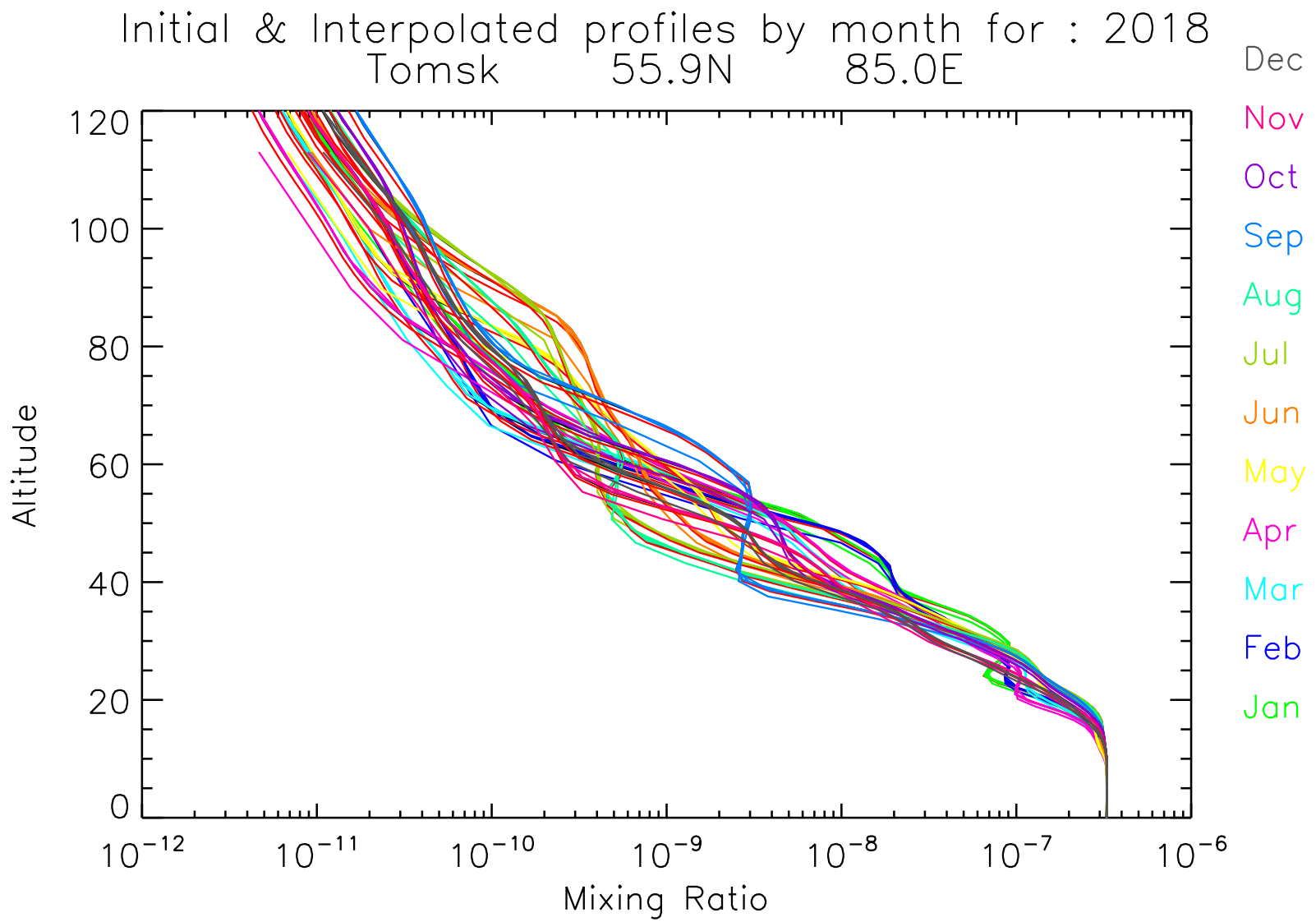
Feb
Jan


Initial & Interpolated profiles by month for : 2018
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
Oct
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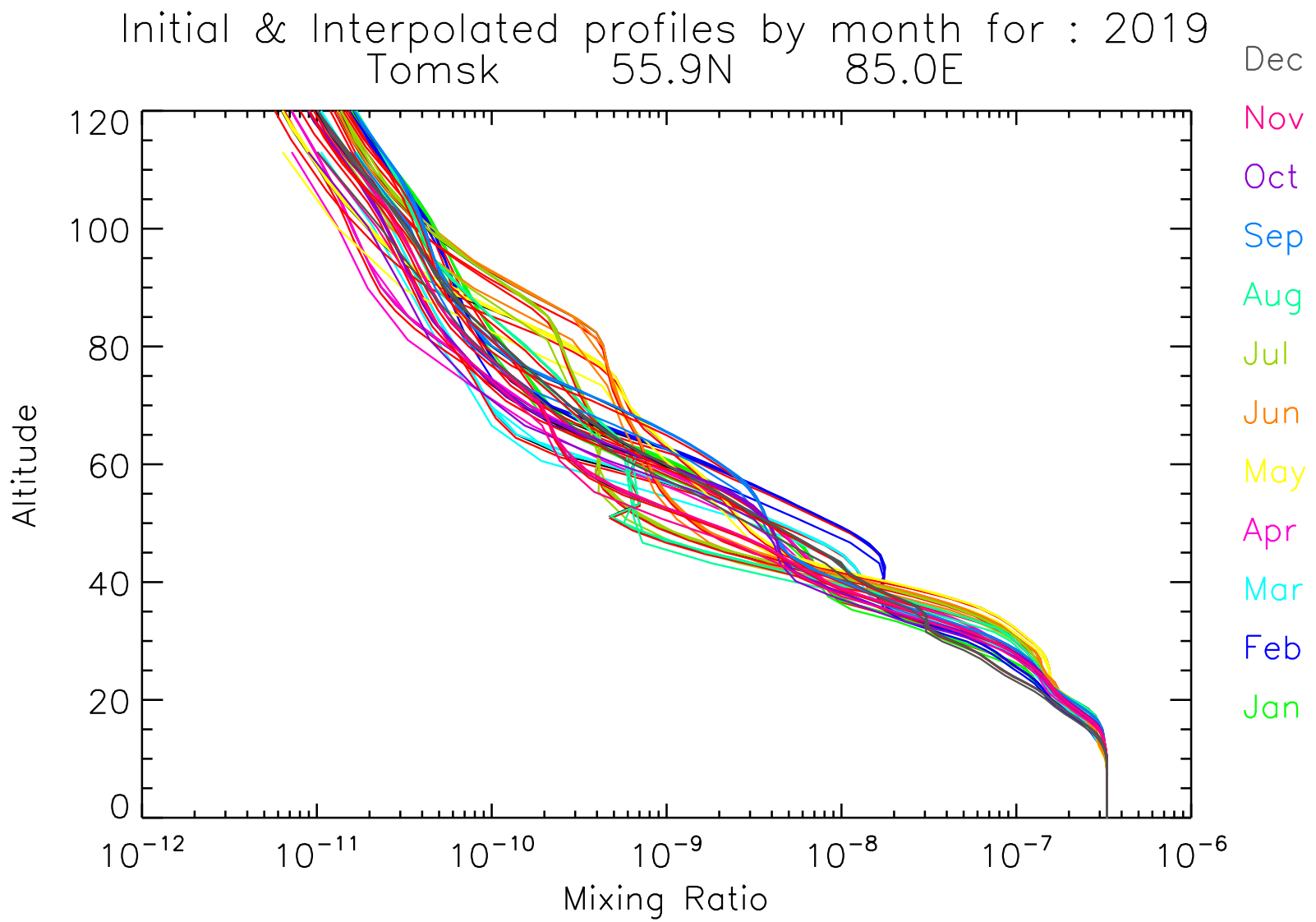
Jan


Initial & Interpolated profiles by month for : 2019
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
Oct
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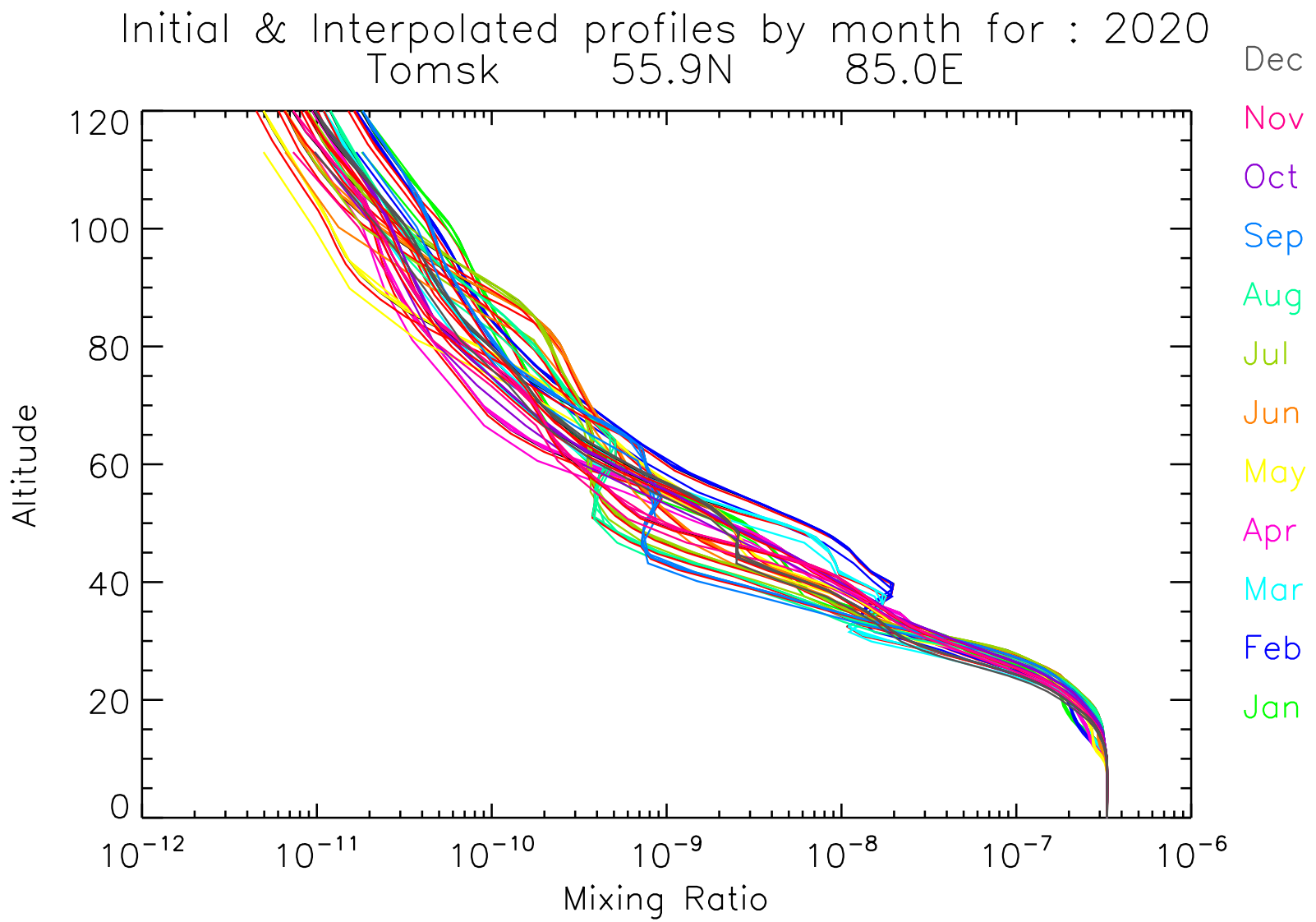
Jan


Initial & Interpolated profiles by month for : 2020
Tomsk 55.9N 85.0E
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio
Dec
Nov
Oct
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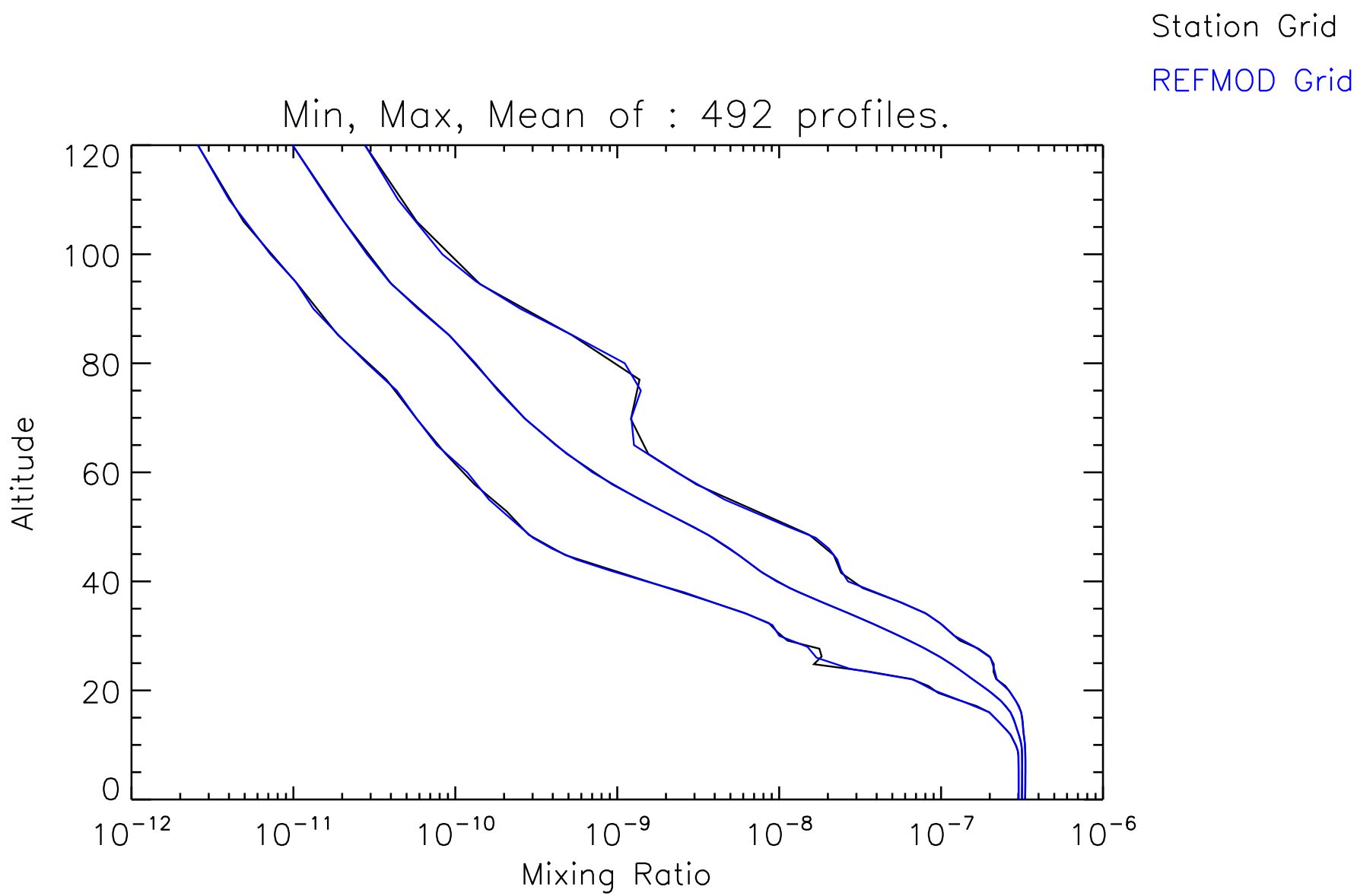
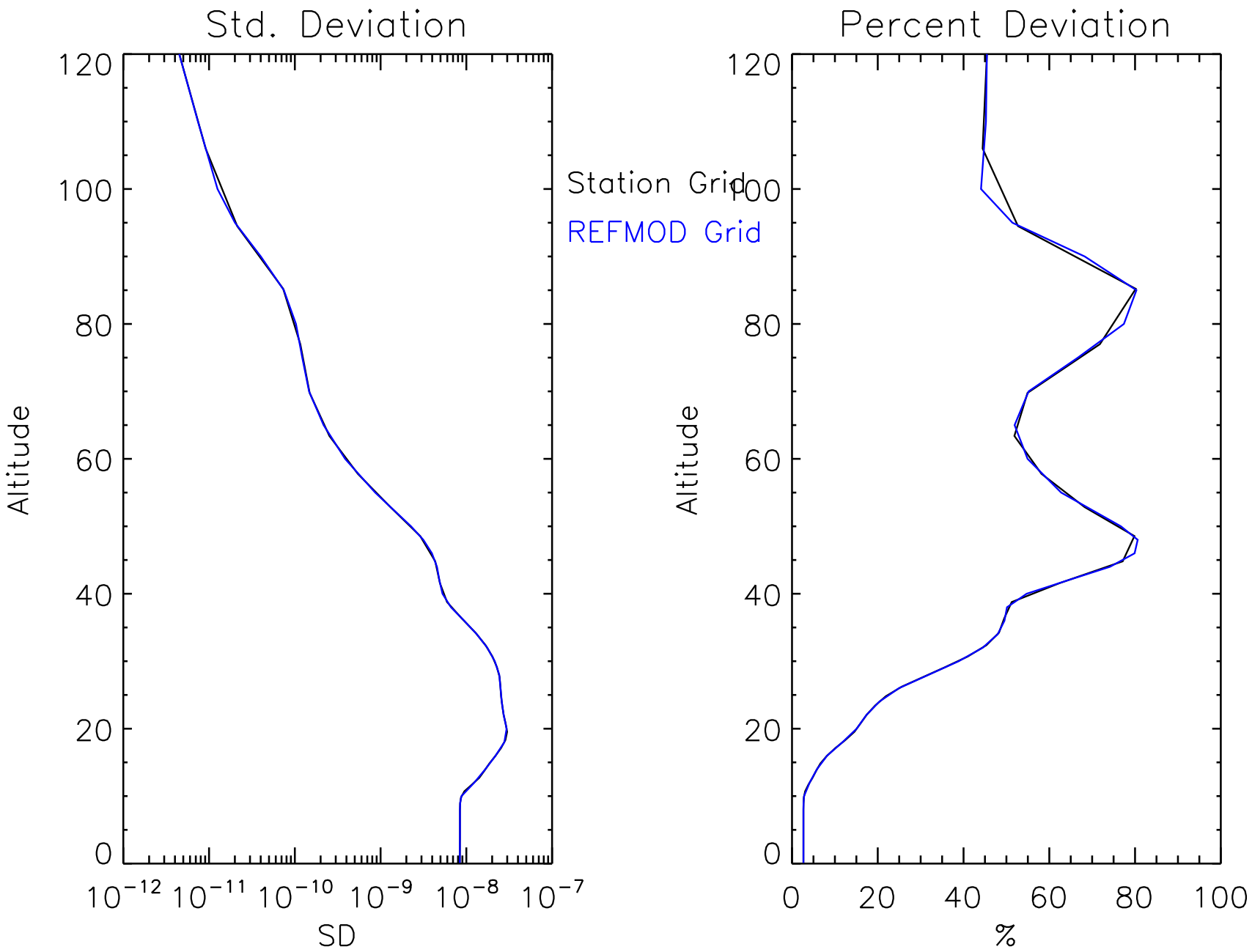
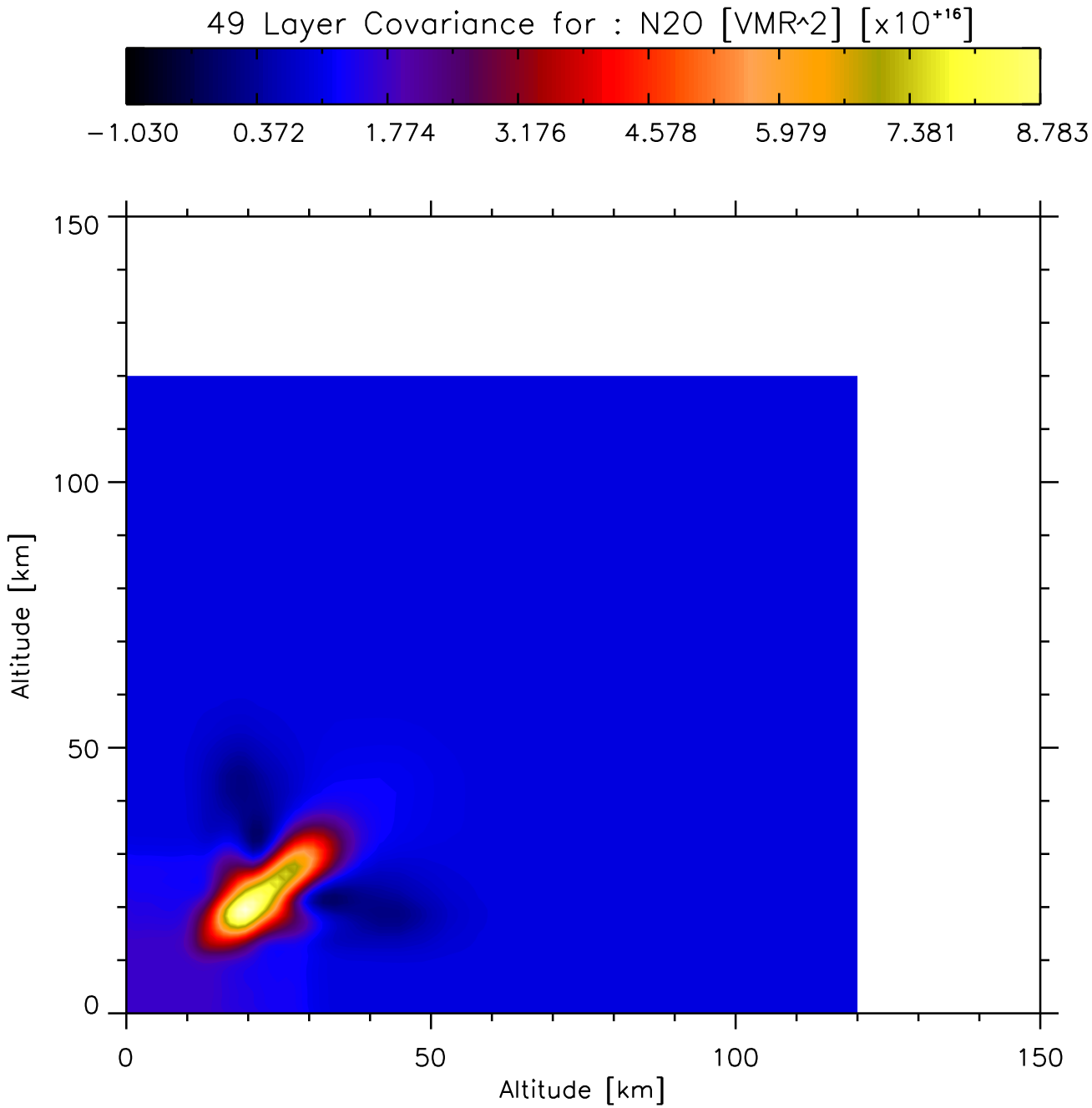
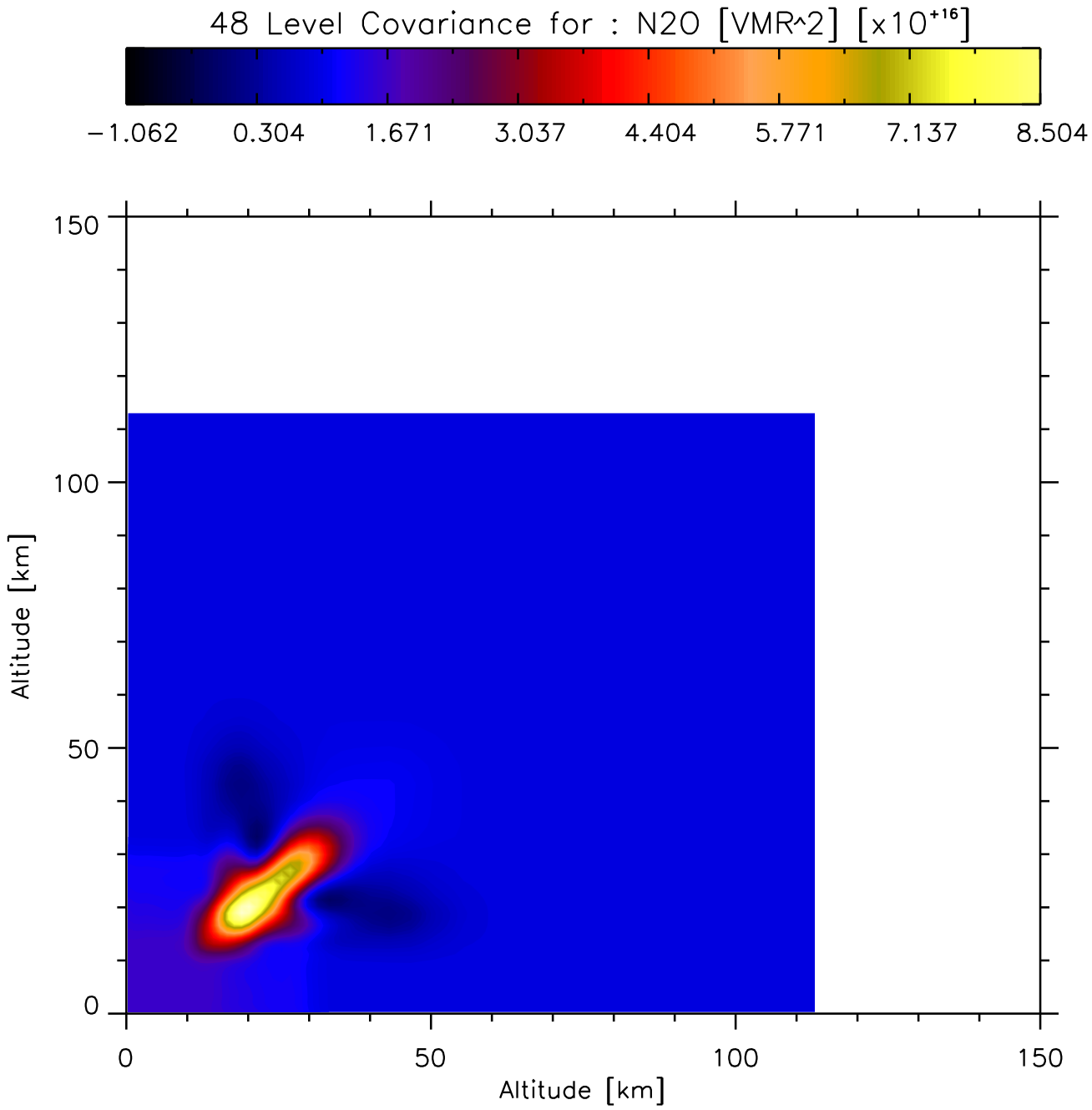
Feb
Jan


Station Grid
REFMOD Grid
Min, Max, Mean of : 492 profiles.
Altitude
120
100
80
60
40
20
0
$10^{-12}$
$10^{-11}$
$10^{-10}$
$10^{-9}$
$10^{-8}$
$10^{-7}$
$10^{-6}$
Mixing Ratio


Std. Deviation
Percent Deviation
Station Grid
REFMOD Grid
Altitude
Altitude
120
100
80
60
40
20
0
$10^{-12}$ $10^{-11}$ $10^{-10}$ $10^{-9}$ $10^{-8}$ $10^{-7}$
SD
0 20 40 60 80 100
%


49 Layer Covariance for : N2O [VMR^2] [x10^+16]
−1.030
0.372
1.774
3.176
4.578
5.979
7.381
8.783
150
100
50
0
Altitude [km]
0
50
100
150
Altitude [km]

49 Layer Covariance for : N2O [VMR^2] [x10^+16]
-150
0
2
4
6
8
10
Y Altitude
100
50
0
0
50
X Altitude
100
150


48 Level Covariance for : N2O [VMR^2] [x10^+16]
−1.062
0.304
1.671
3.037
4.404
5.771
7.137
8.504
150
100
50
0
Altitude [km]
0
50
100
150
Altitude [km]

48 Level Covariance for : N20 [VMR^2] [x10^+16]
0
2
4
6
8
10
Y Altitude
0
50
100
150
X Altitude
0
50
100
150