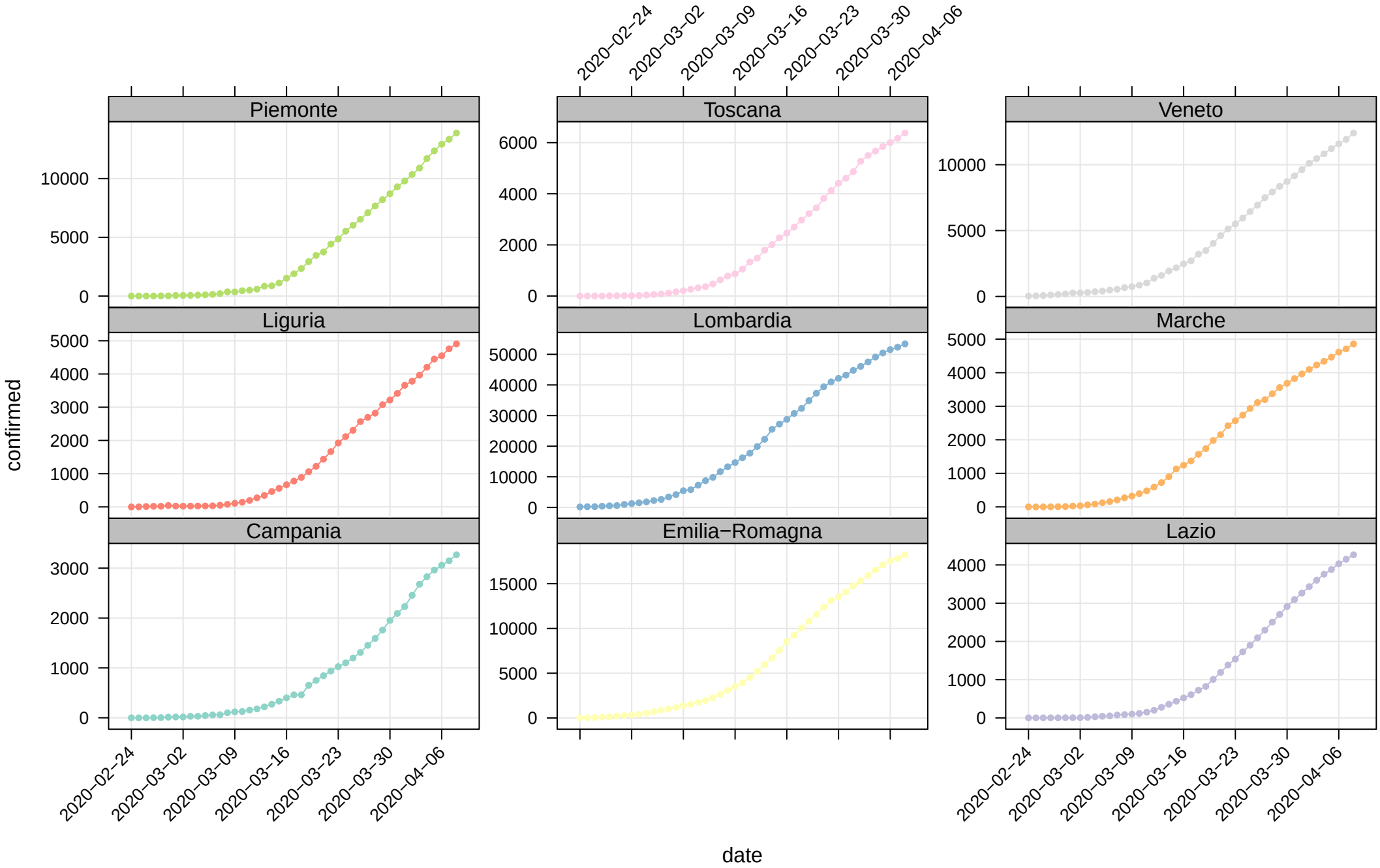
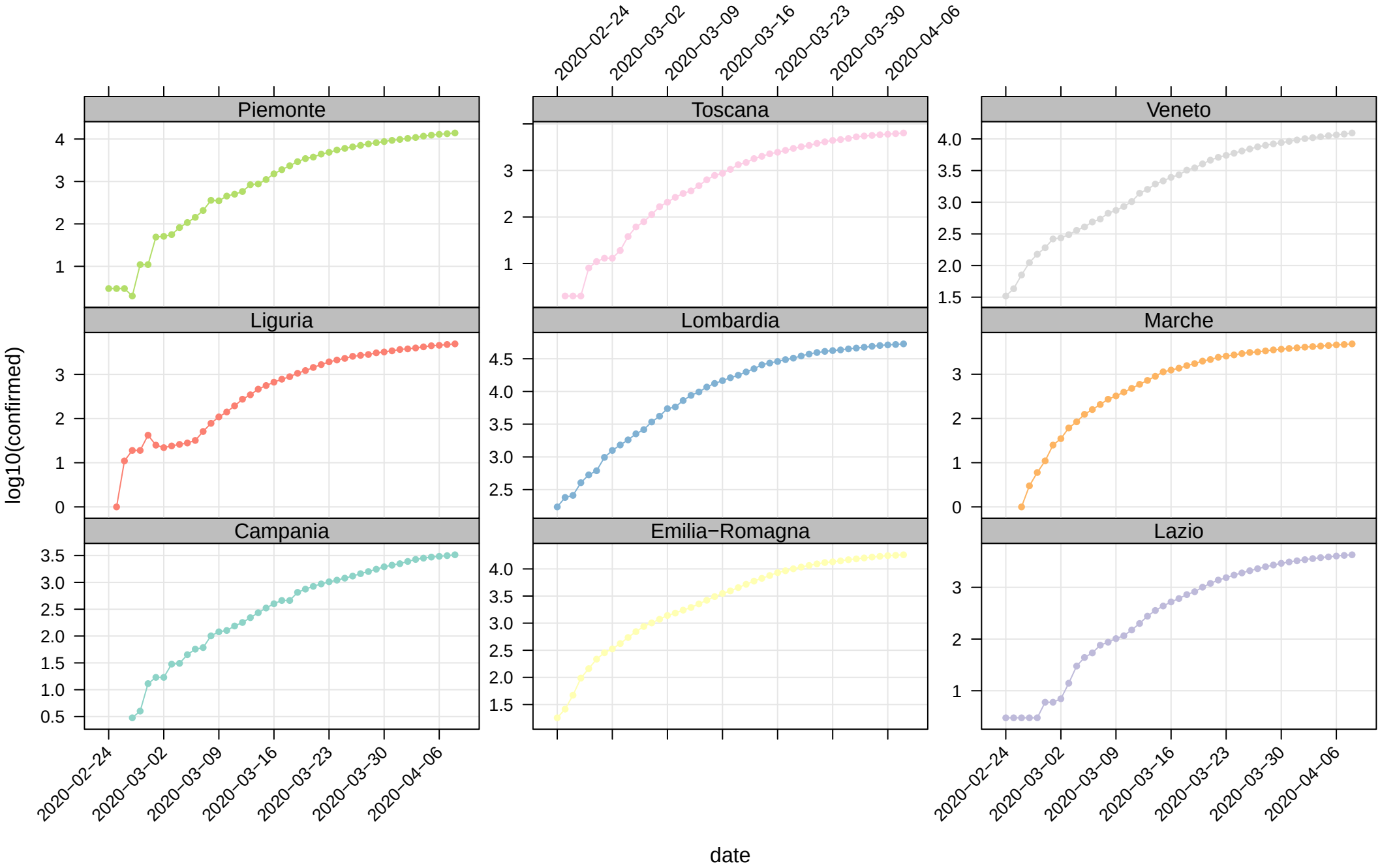
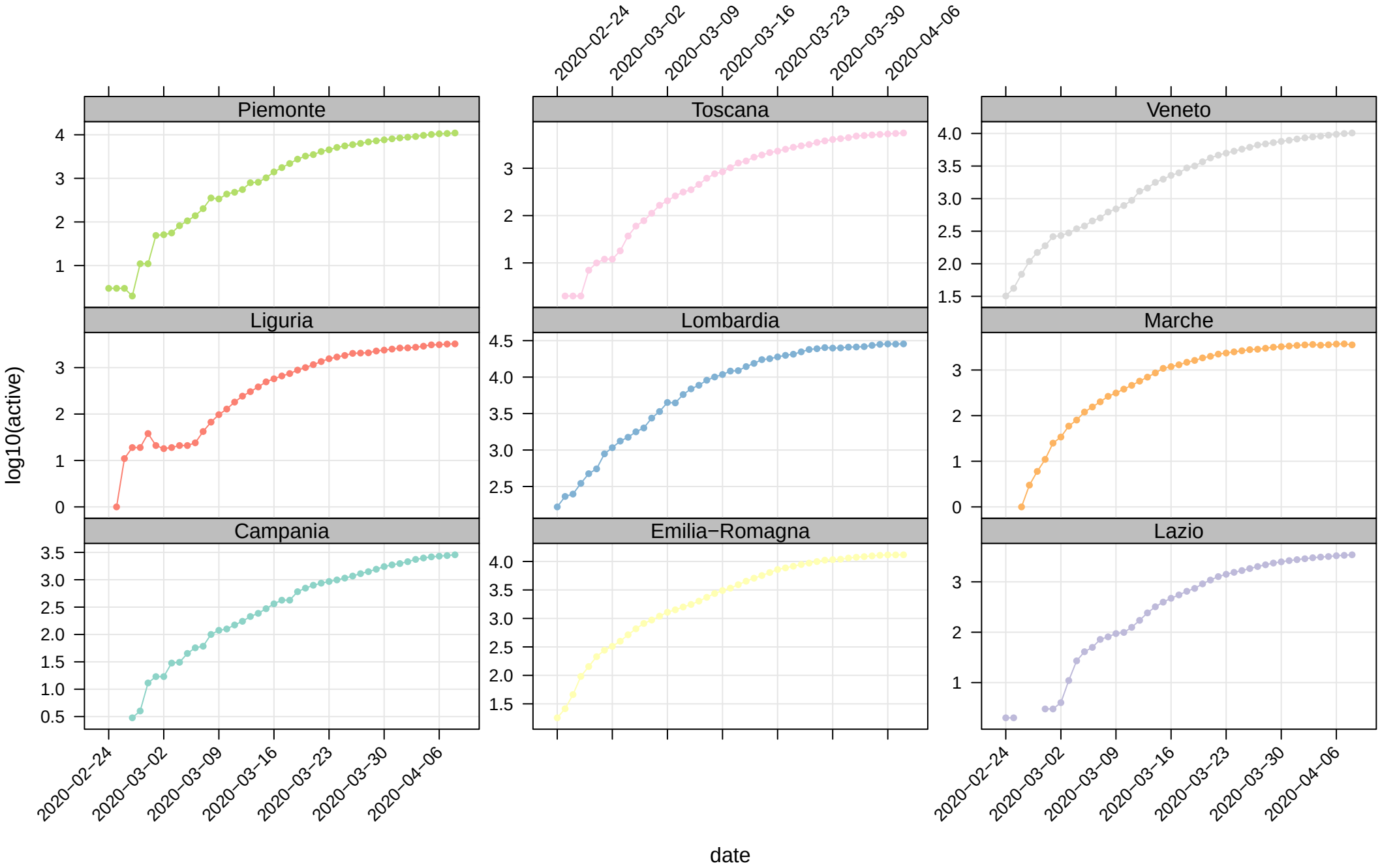
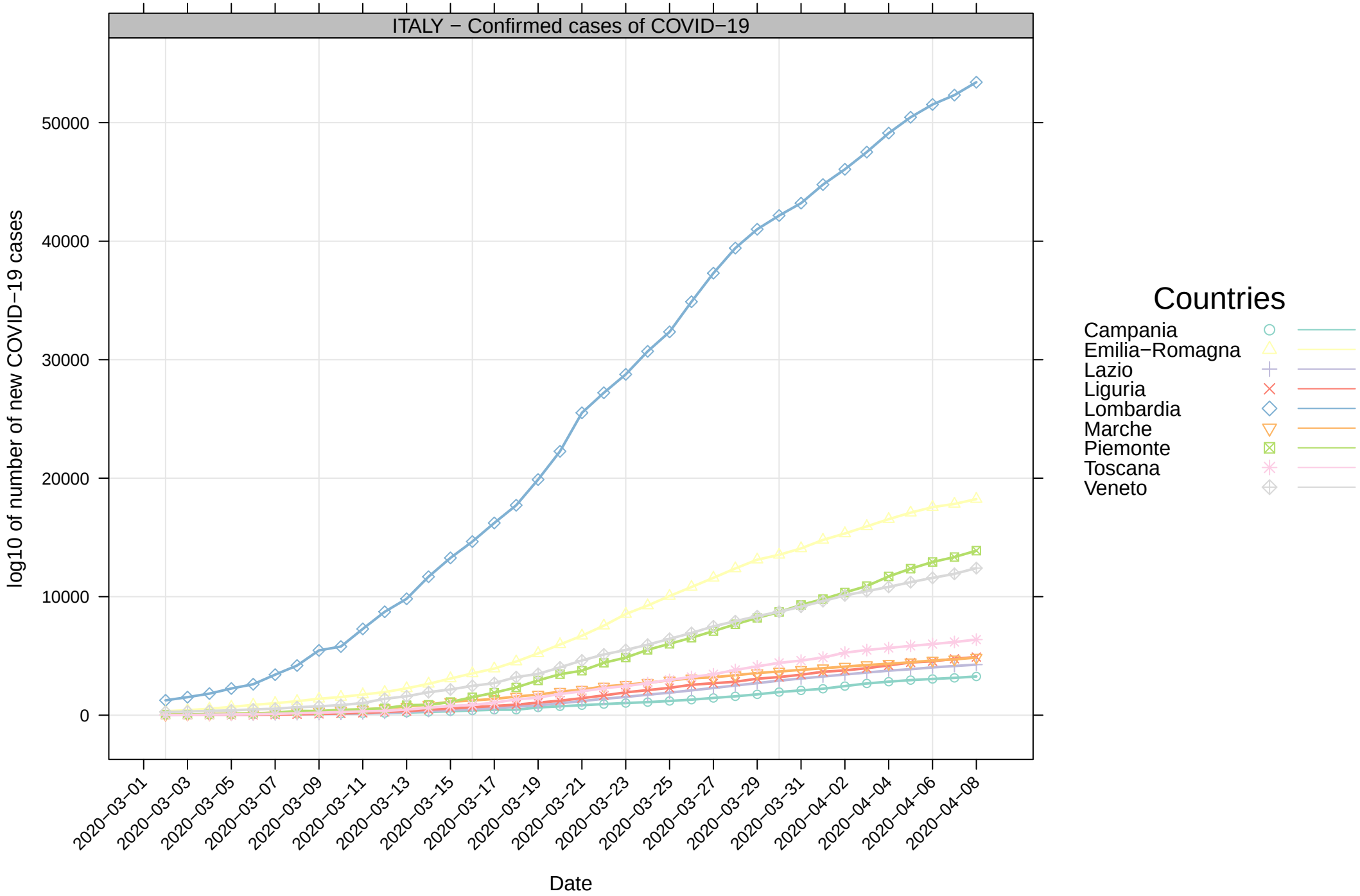
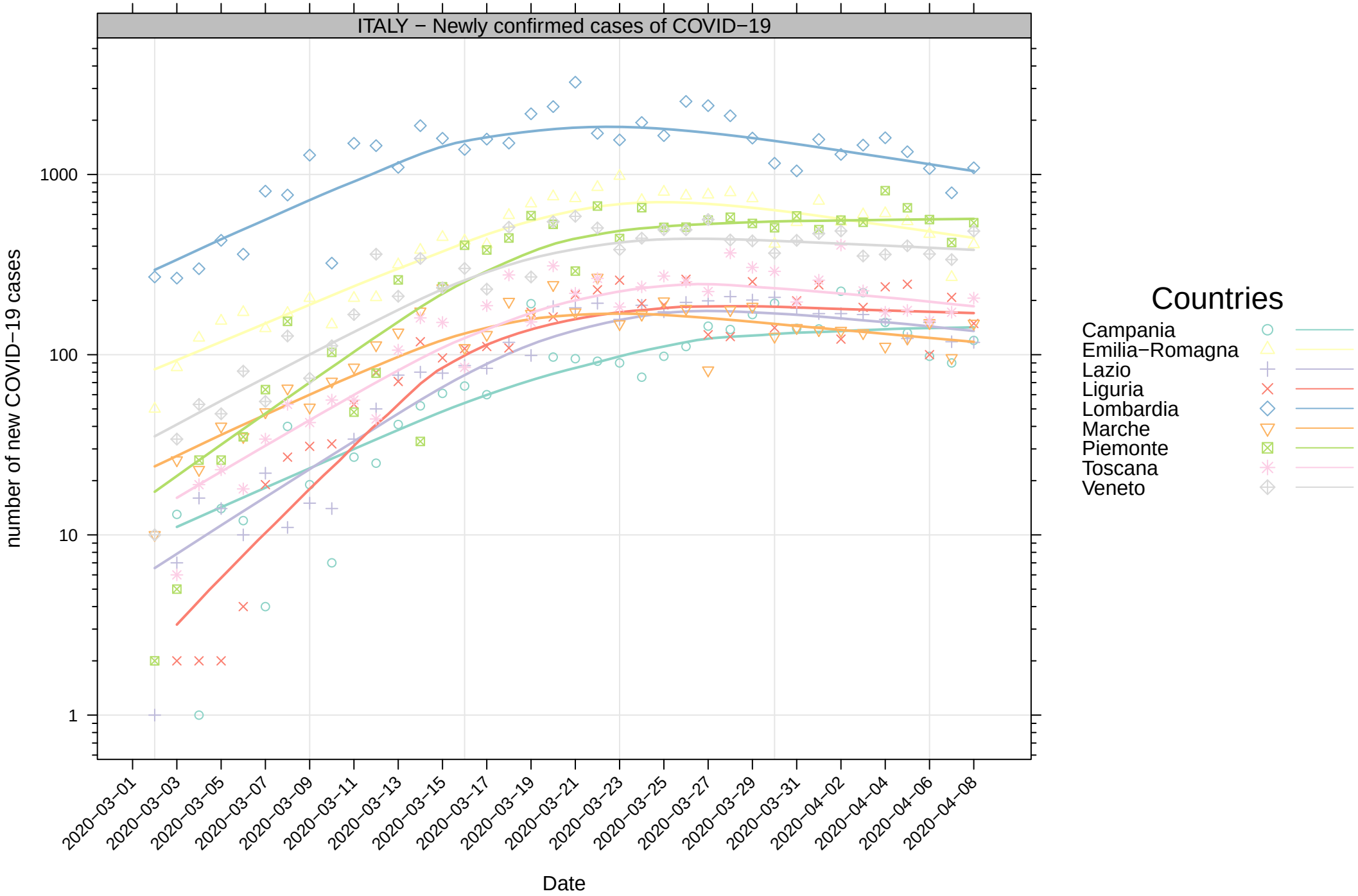
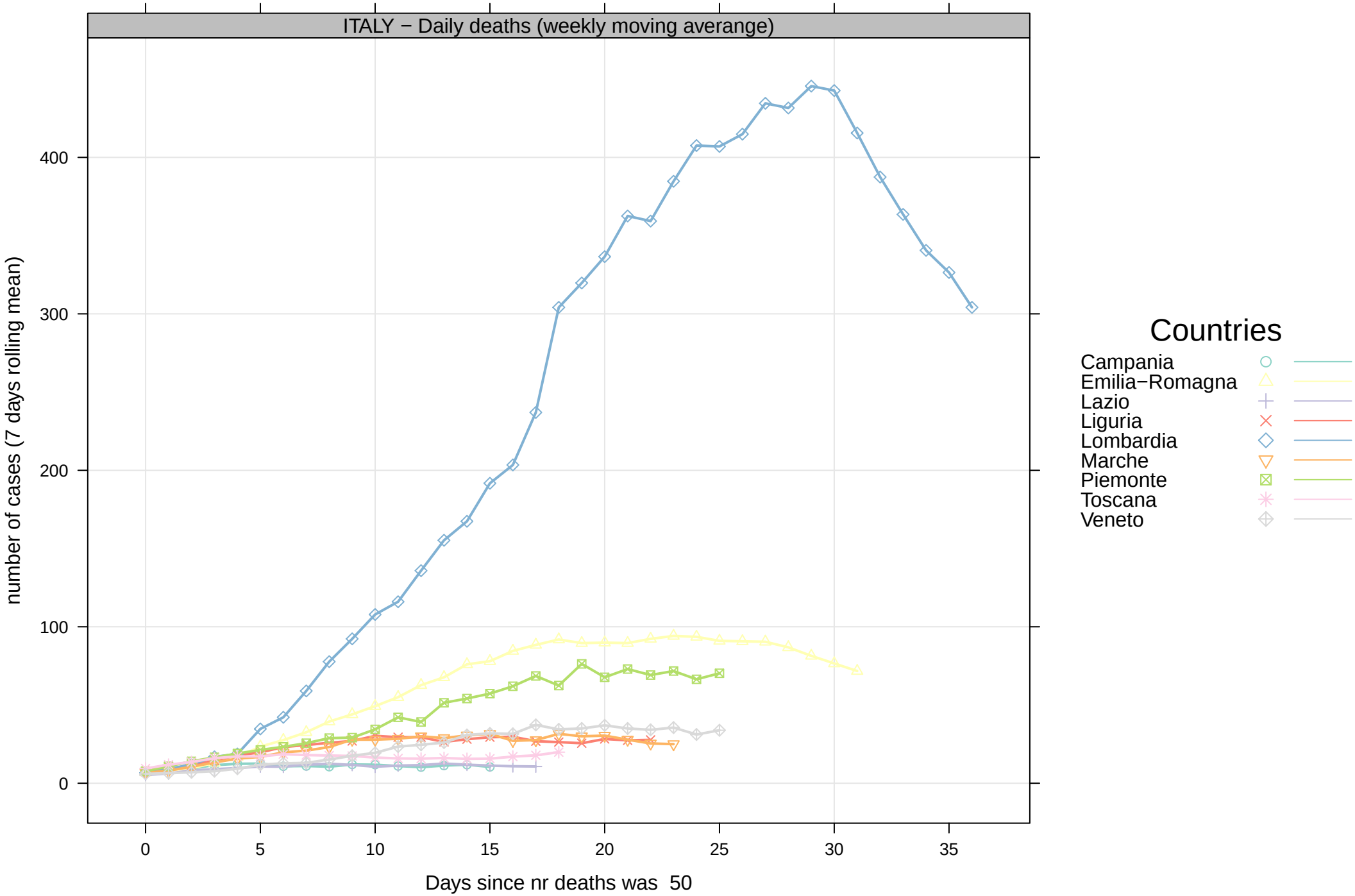

ITALY − Confirmed cases of COVID−19
(last date in this graph is 2020−04−08)
Piemonte
Toscana
Veneto
Liguria
Lombardia
Marche
Campania
Emilia−Romagna
Lazio
confirmed
date
2020−02−24
2020−03−02
2020−03−09
2020−03−16
2020−03−23
2020−03−30
2020−04−06

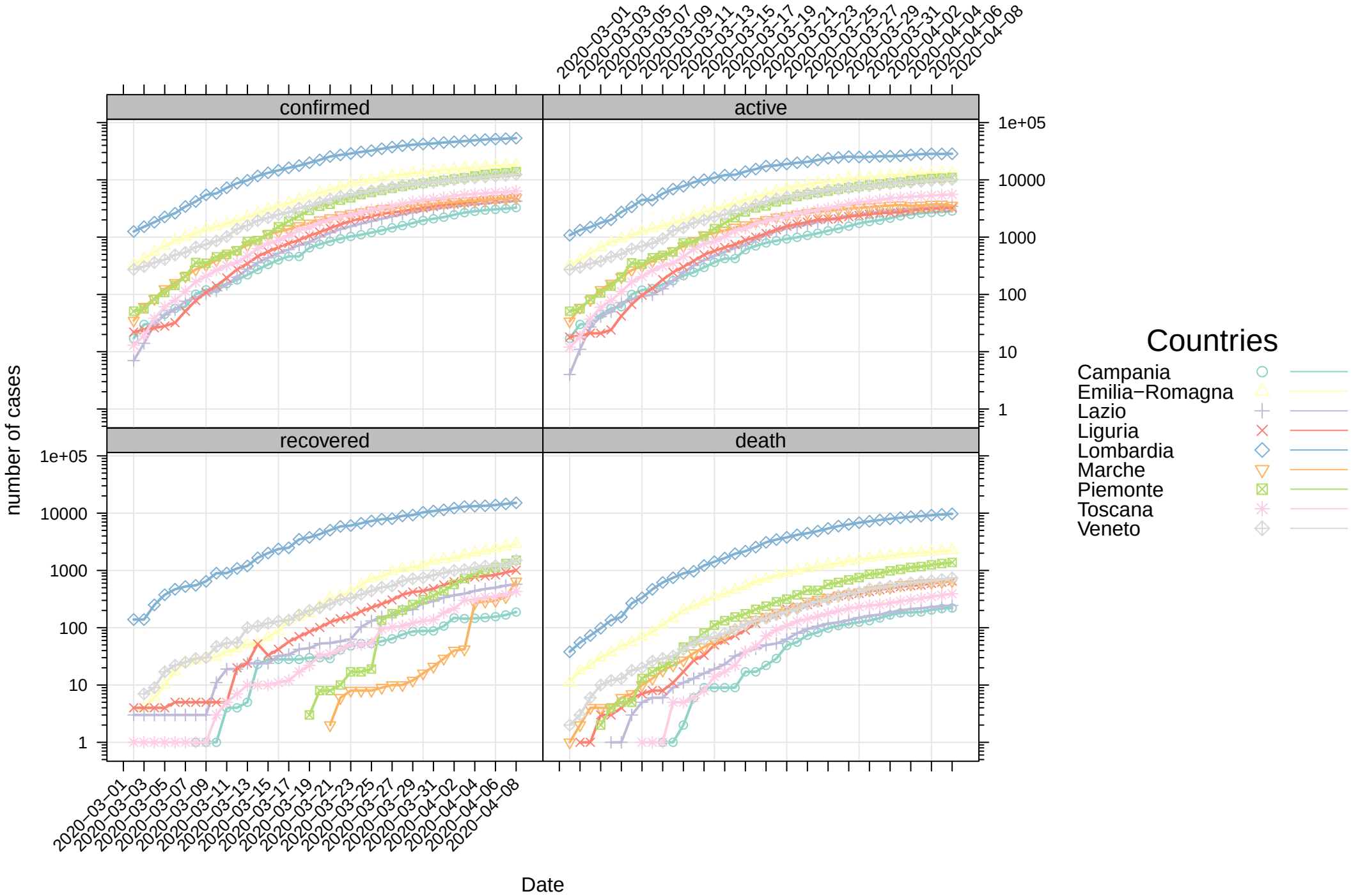

ITALY − Log 10 Confirmed cases of COVID−19
(last date in this graph is 2020−04−08)
Piemonte
Toscana
Veneto
Liguria
Lombardia
Marche
Campania
Emilia−Romagna
Lazio
log10(confirmed)
date
2020−02−24
2020−03−02
2020−03−09
2020−03−16
2020−03−23
2020−03−30
2020−04−06

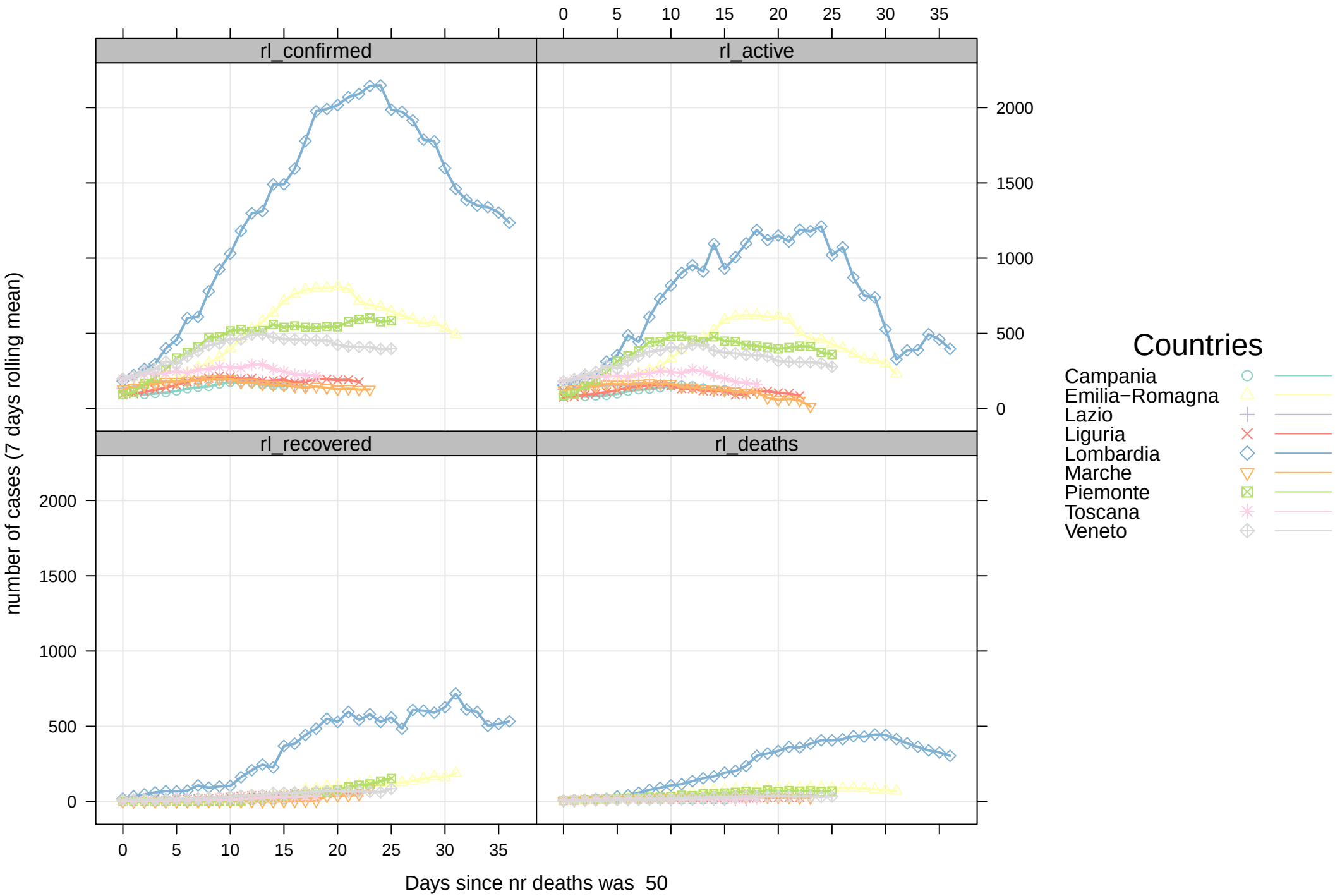

ITALY − Log 10 Active cases of COVID−19
(last date in this graph is 2020−04−08)
Piemonte
Toscana
Veneto
Liguria
Lombardia
Marche
Campania
Emilia−Romagna
Lazio
log10(active)
date
2020−02−24
2020−03−02
2020−03−09
2020−03−16
2020−03−23
2020−03−30
2020−04−06

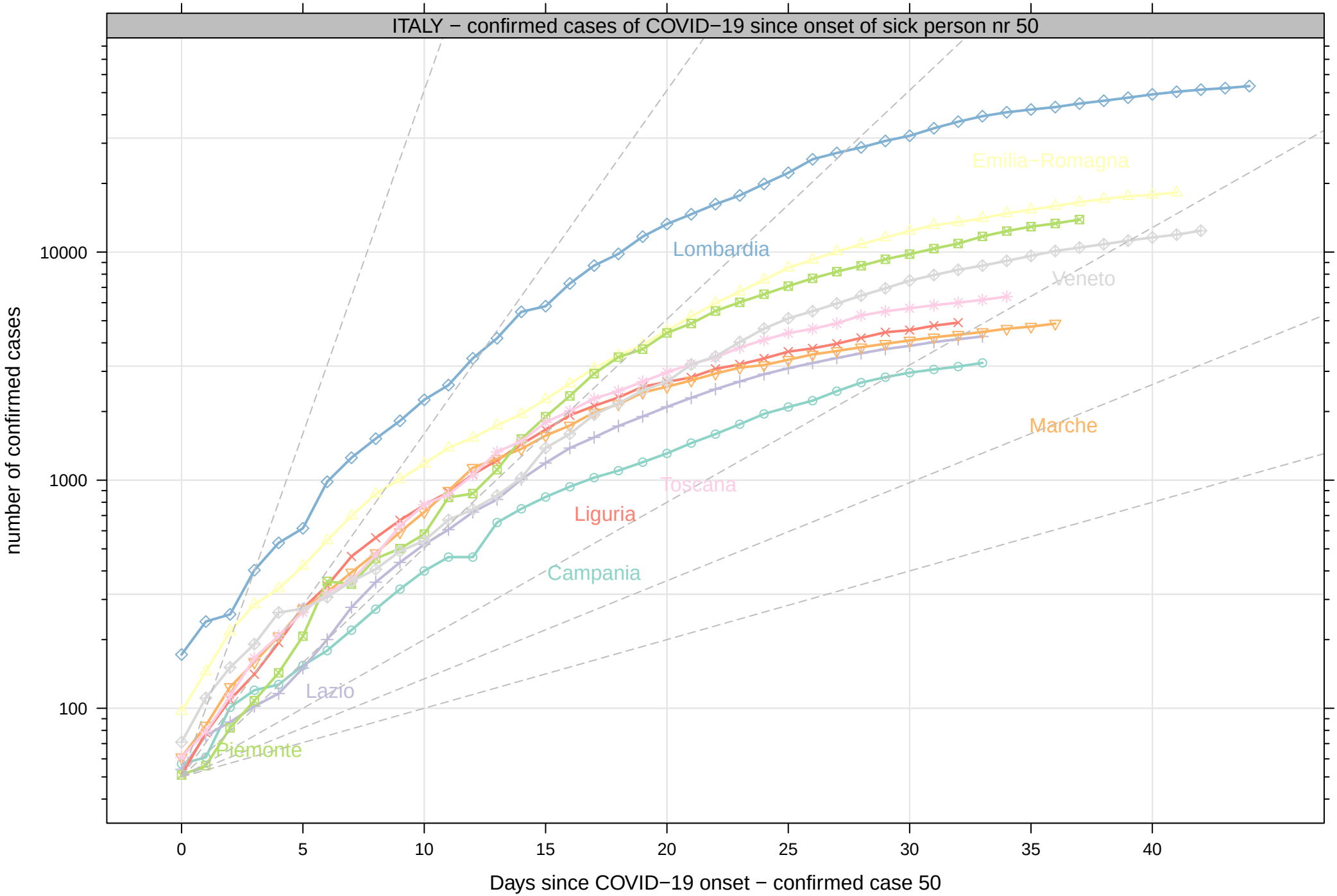

ITALY − Confirmed cases of COVID−19
log10 of number of new COVID−19 cases
50000
40000
30000
20000
10000
0
2020−03−01
2020−03−03
2020−03−05
2020−03−07
2020−03−09
2020−03−11
2020−03−13
2020−03−15
2020−03−17
2020−03−19
2020−03−21
2020−03−23
2020−03−25
2020−03−27
2020−03−29
2020−03−31
2020−04−02
2020−04−04
2020−04−06
2020−04−08
Date
Countries
Campania
Emilia−Romagna
Lazio
Liguria
Lombardia
Marche
Piemonte
Toscana
Veneto

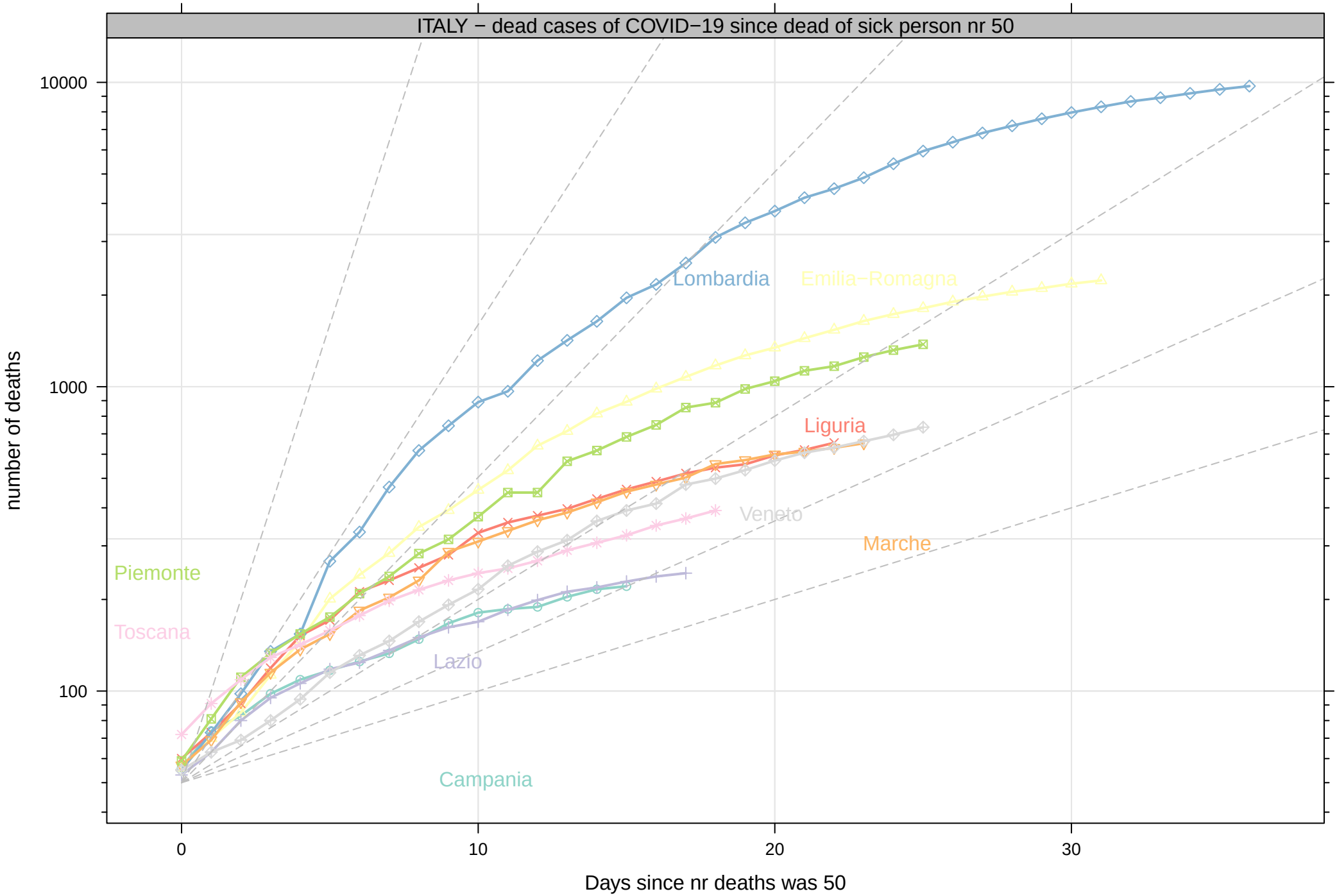

ITALY − Newly confirmed cases of COVID−19
number of new COVID−19 cases
1000
100
10
1
2020−03−01
2020−03−03
2020−03−05
2020−03−07
2020−03−09
2020−03−11
2020−03−13
2020−03−15
2020−03−17
2020−03−19
2020−03−21
2020−03−23
2020−03−25
2020−03−27
2020−03−29
2020−03−31
2020−04−02
2020−04−04
2020−04−06
2020−04−08
Date
Countries
Campania
Emilia−Romagna
Lazio
Liguria
Lombardia
Marche
Piemonte
Toscana
Veneto

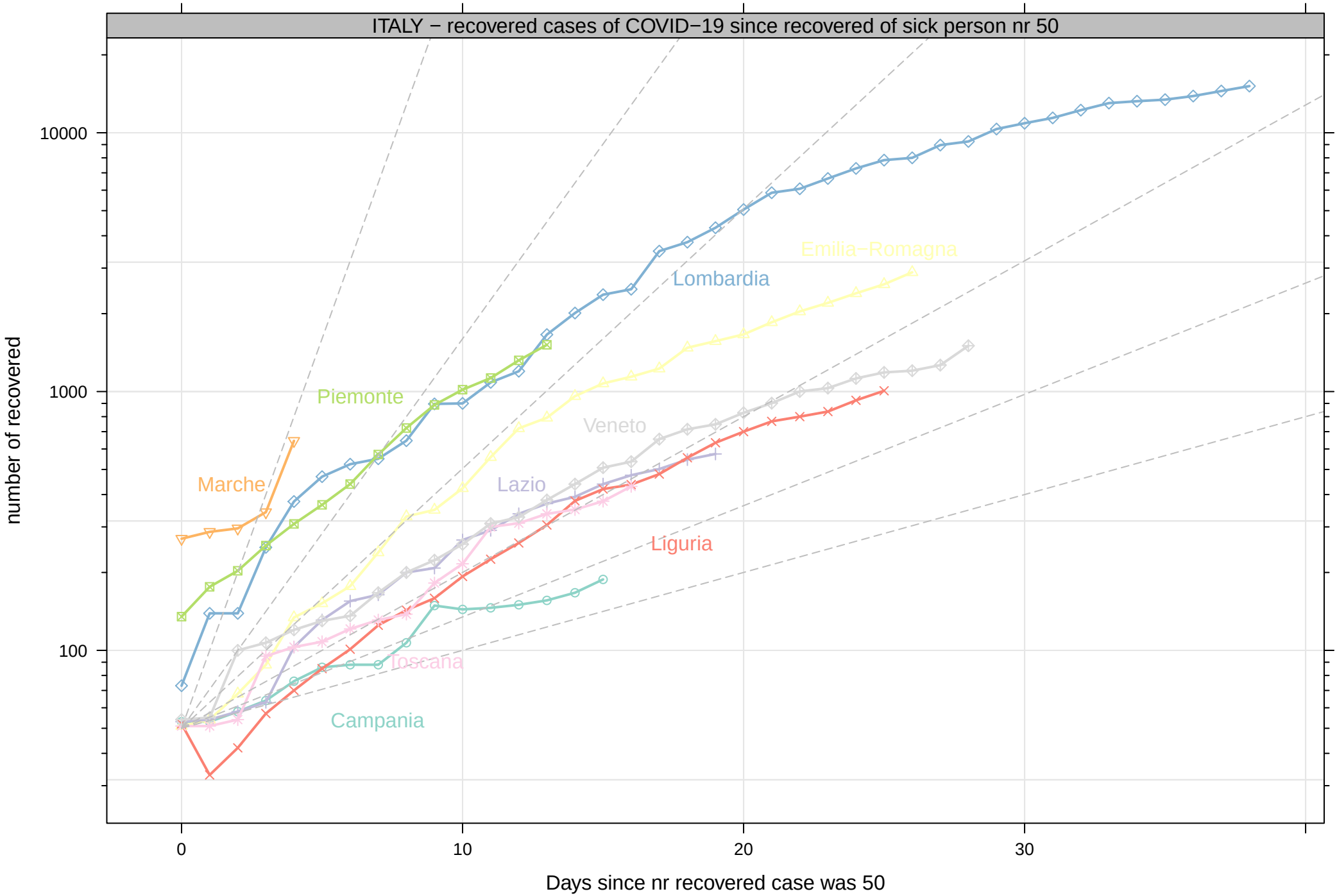

ITALY − Daily deaths (weekly moving averange)
number of cases (7 days rolling mean)
0
100
200
300
400
0
5
10
15
20
25
30
35
Days since nr deaths was 50
Countries
Campania
Emilia−Romagna
Lazio
Liguria
Lombardia
Marche
Piemonte
Toscana
Veneto

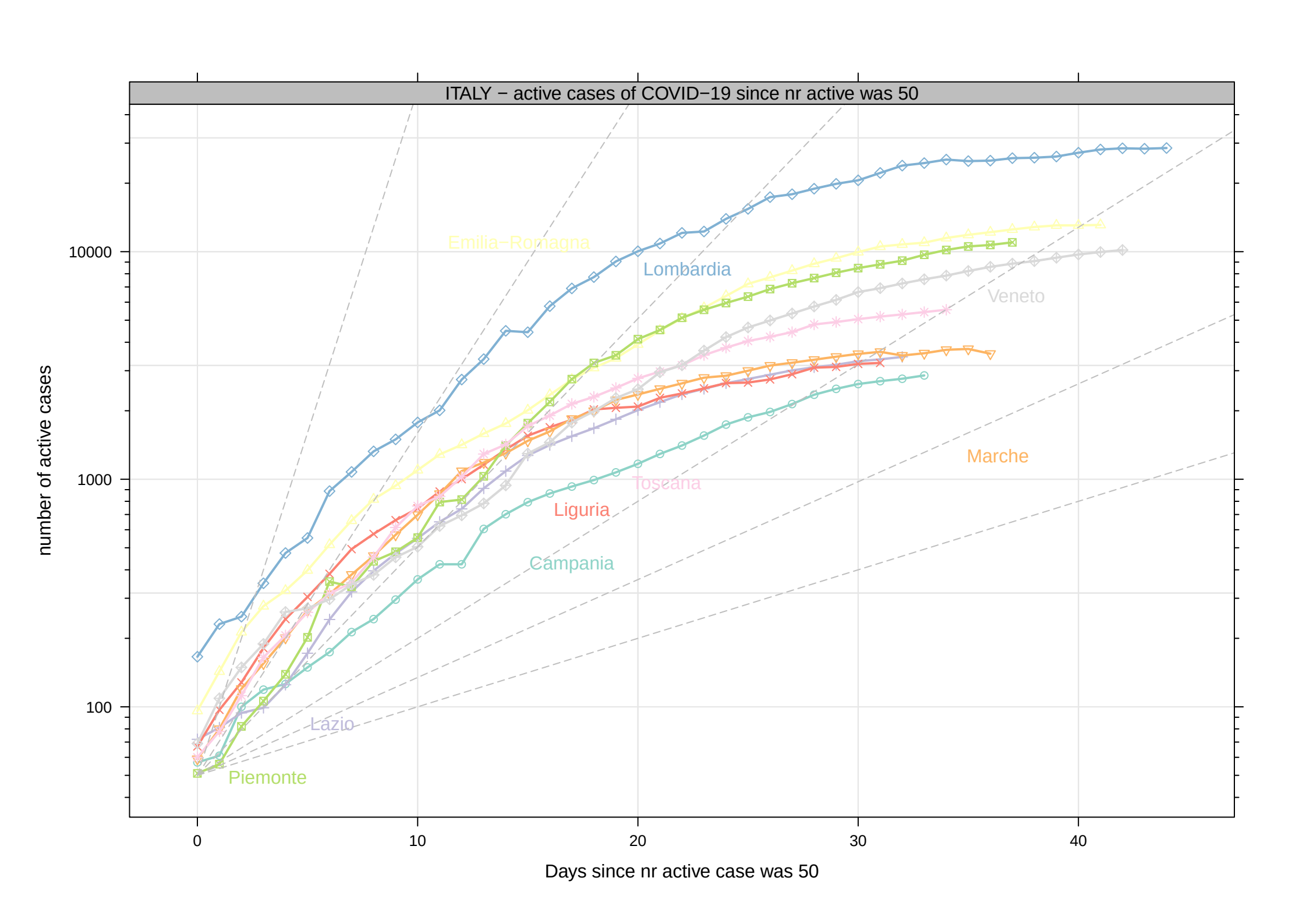

confirmed
active
recovered
death
number of cases
Date
1e+05
10000
1000
100
10
1
2020–03–01
2020–03–03
2020–03–05
2020–03–07
2020–03–09
2020–03–11
2020–03–13
2020–03–15
2020–03–17
2020–03–19
2020–03–21
2020–03–23
2020–03–25
2020–03–27
2020–03–29
2020–03–31
2020–04–02
2020–04–04
2020–04–06
2020–04–08
Countries
Campania
Emilia−Romagna
Lazio
Liguria
Lombardia
Marche
Piemonte
Toscana
Veneto

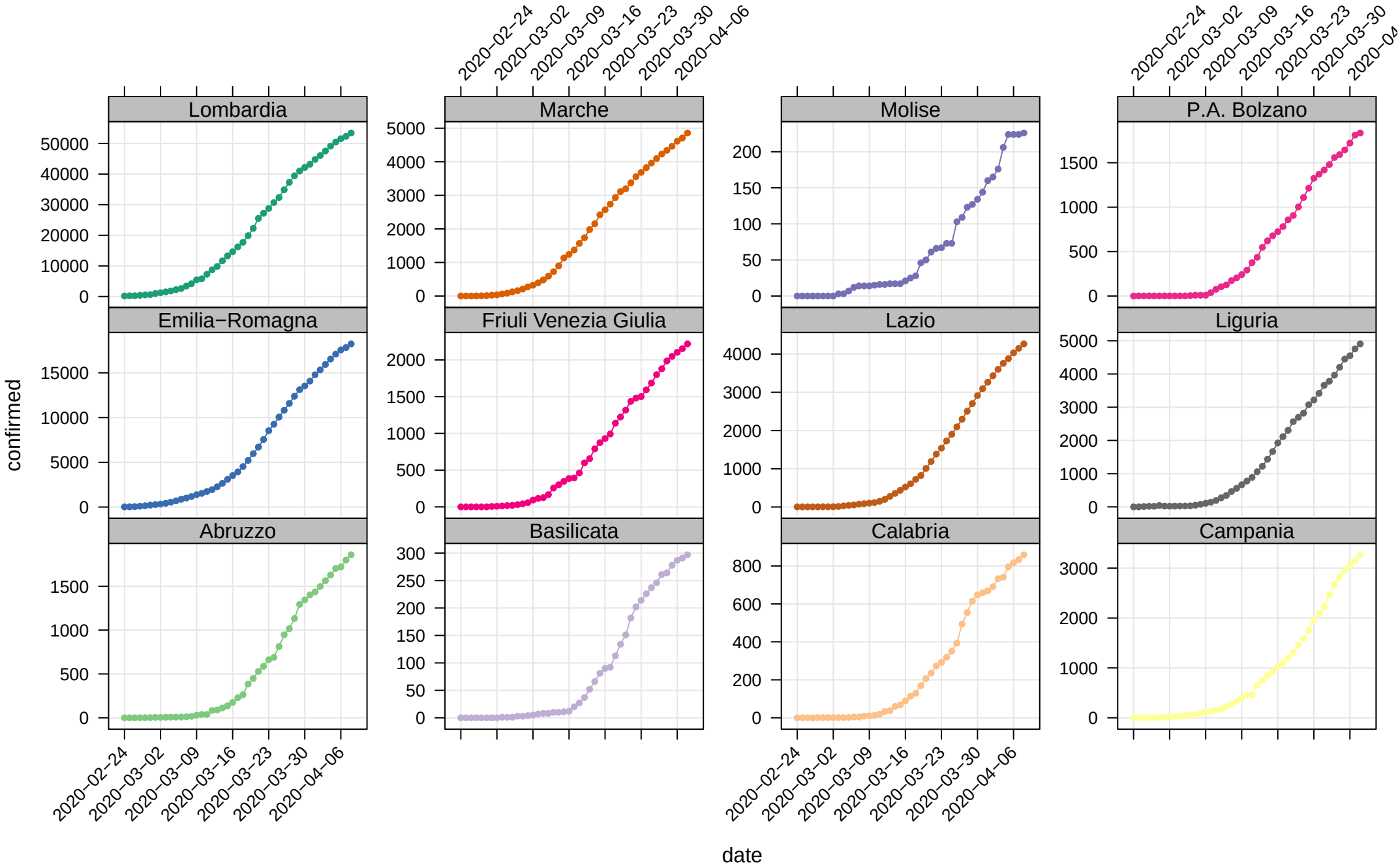

rl_confirmed
rl_active
rl_recovered
rl_deaths
number of cases (7 days rolling mean)
Days since nr deaths was 50
0
5
10
15
20
25
30
35
0
500
1000
1500
2000
Countries
Campania
Emilia−Romagna
Lazio
Liguria
Lombardia
Marche
Piemonte
Toscana
Veneto

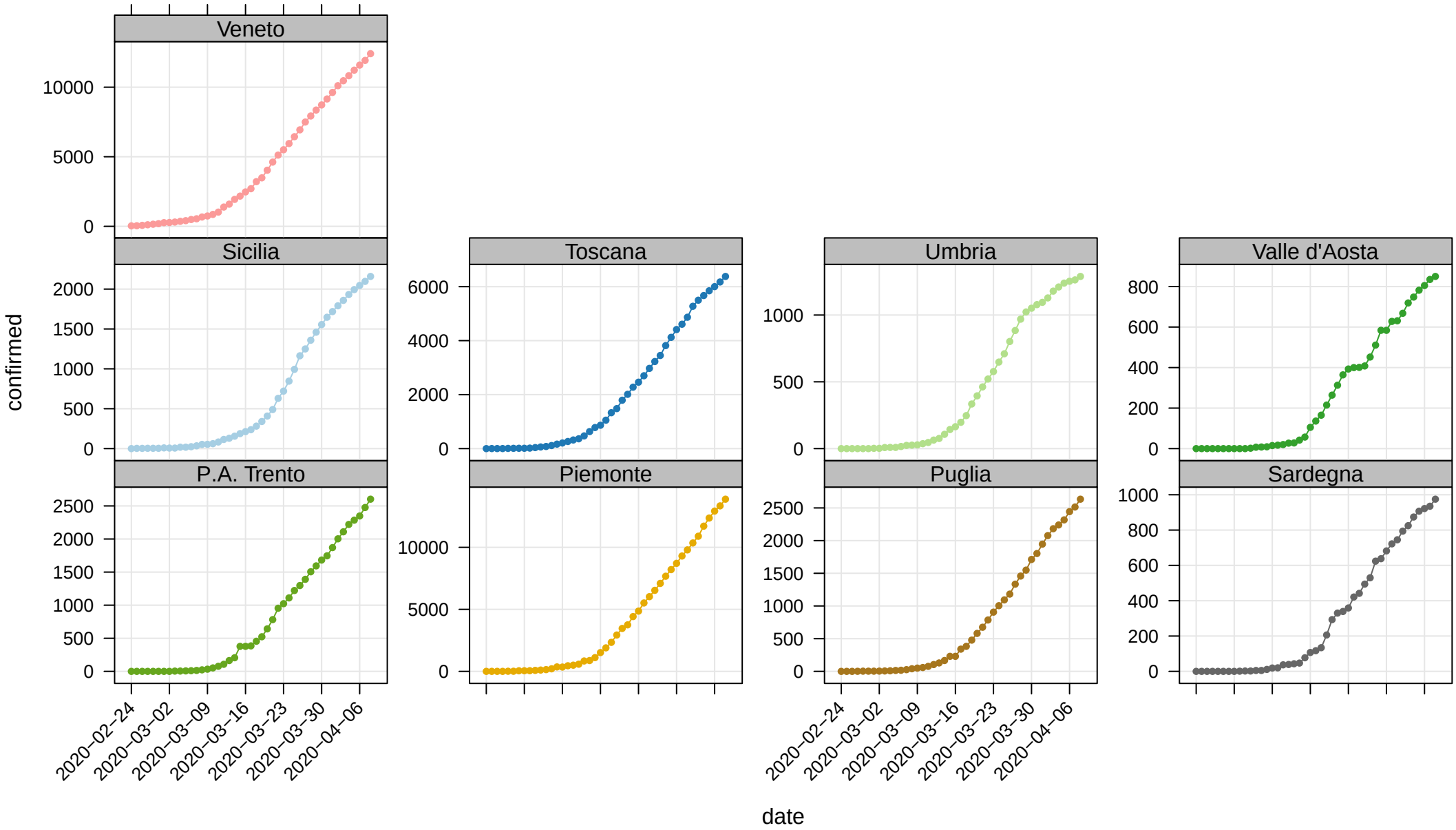

ITALY − confirmed cases of COVID−19 since onset of sick person nr 50
number of confirmed cases
10000
1000
100
0
5
10
15
20
25
30
35
40
Days since COVID−19 onset − confirmed case 50
Lombardia
Emilia−Romagna
Veneto
Marche
Toscana
Liguria
Campania
Lazio
Piemonte

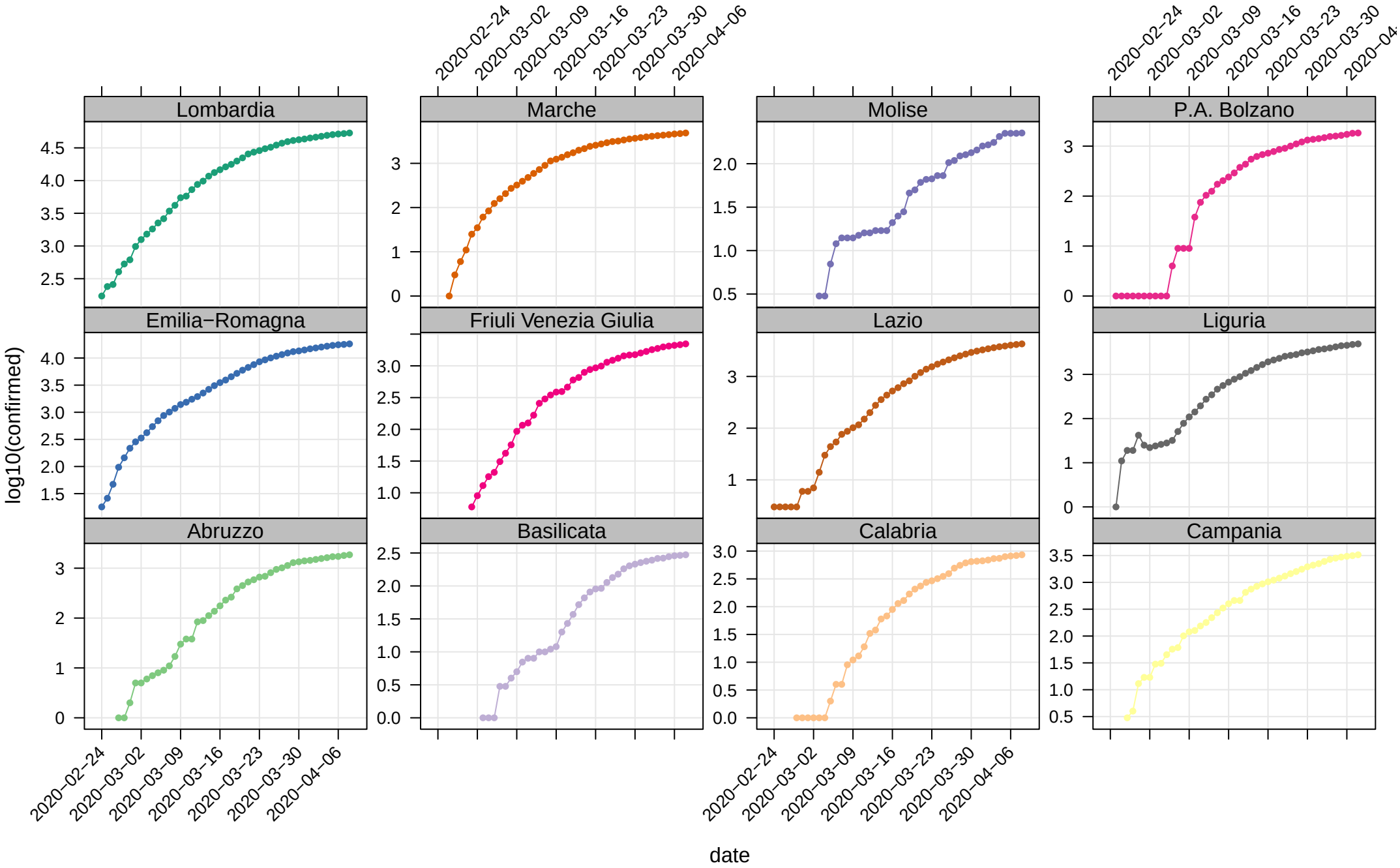

ITALY − dead cases of COVID−19 since dead of sick person nr 50
number of deaths
10000
1000
100
0
10
20
30
Days since nr deaths was 50
Lombardia
Emilia−Romagna
Liguria
Veneto
Marche
Piemonte
Toscana
Lazio
Campania

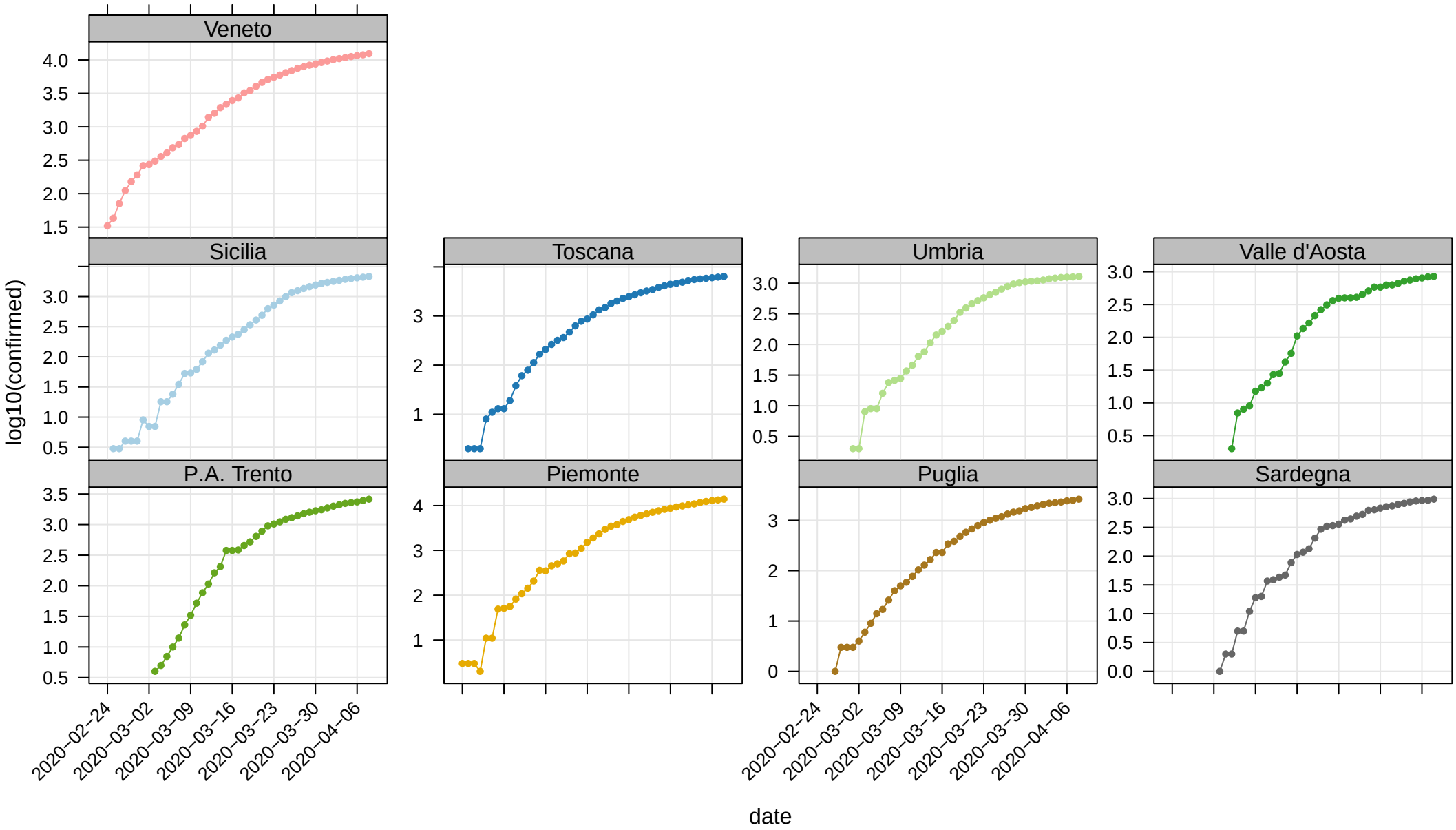

ITALY − recovered cases of COVID−19 since recovered of sick person nr 50
number of recovered
10000
1000
100
0
10
20
30
Days since nr recovered case was 50
Lombardia
Emilia−Romagna
Piemonte
Veneto
Marche
Lazio
Liguria
Toscana
Campania

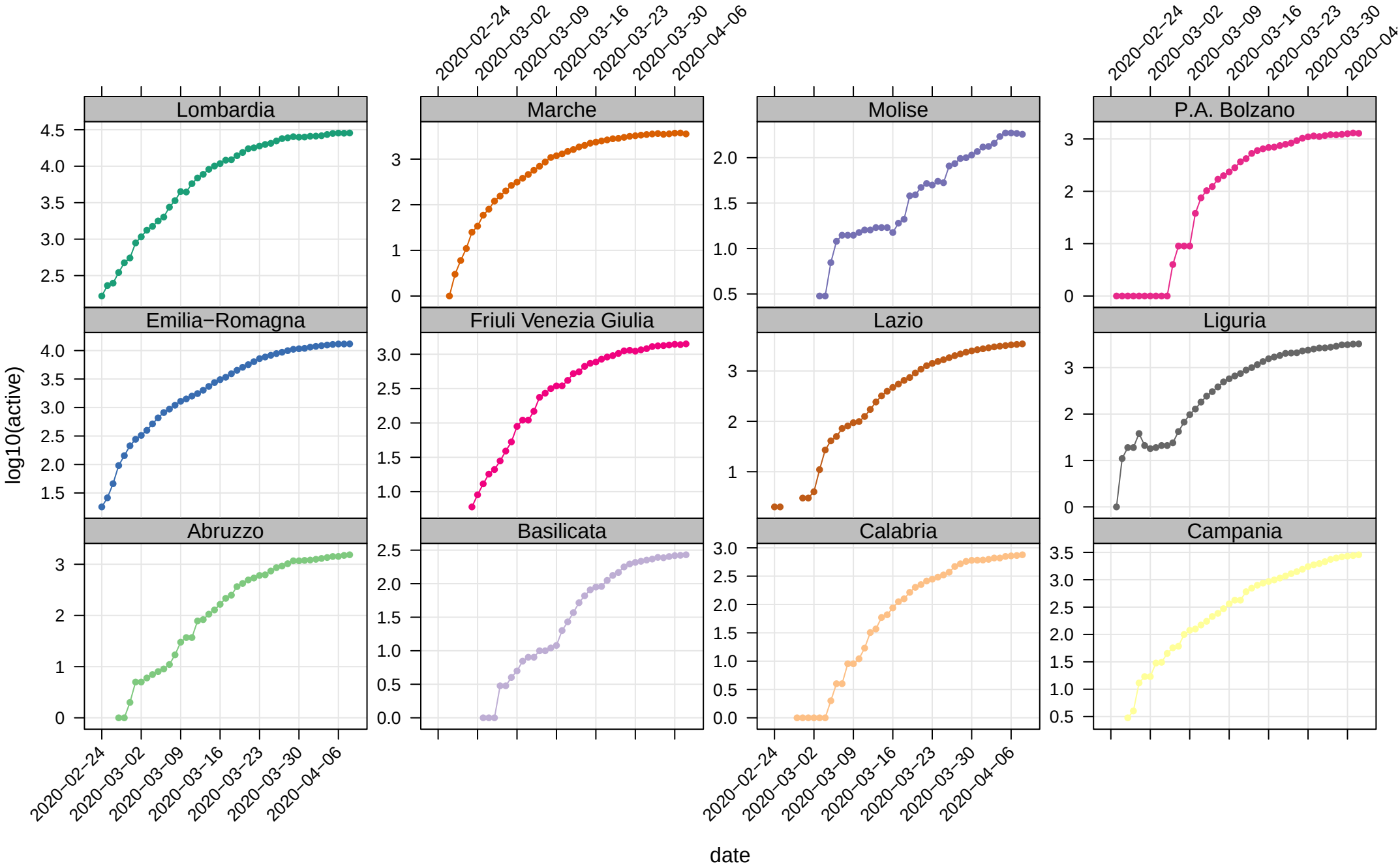

ITALY − active cases of COVID−19 since nr active was 50
number of active cases
10000
1000
100
0
10
20
30
40
Days since nr active case was 50
Emilia−Romagna
Lombardia
Veneto
Marche
Toscana
Liguria
Campania
Lazio
Piemonte

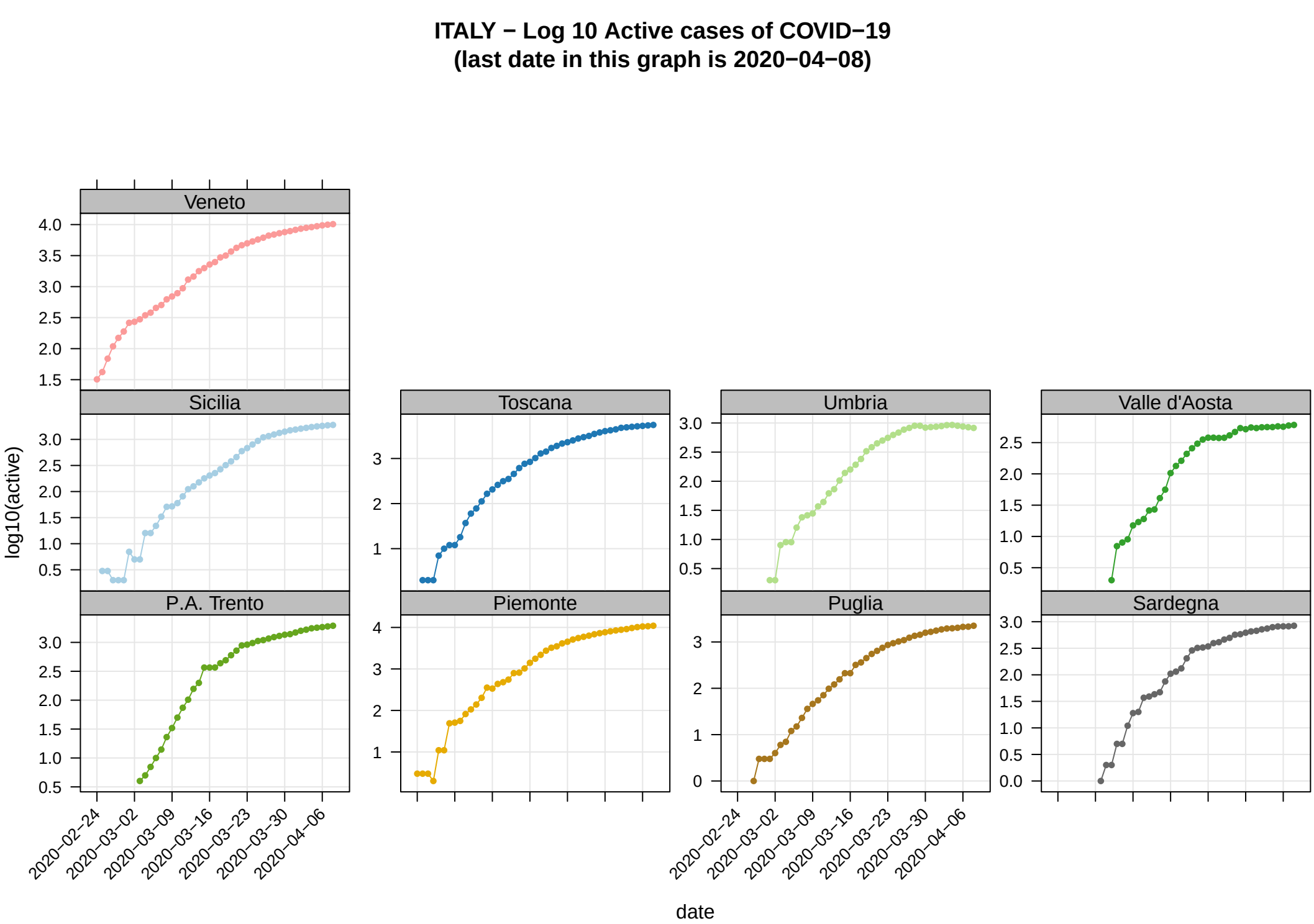

ITALY − Confirmed cases of COVID−19
(last date in this graph is 2020−04−08)
Lombardia
Marche
Molise
P.A. Bolzano
Emilia−Romagna
Friuli Venezia Giulia
Lazio
Liguria
Abruzzo
Basilicata
Calabria
Campania
confirmed
date
2020−02−24
2020−03−02
2020−03−09
2020−03−16
2020−03−23
2020−03−30
2020−04−06

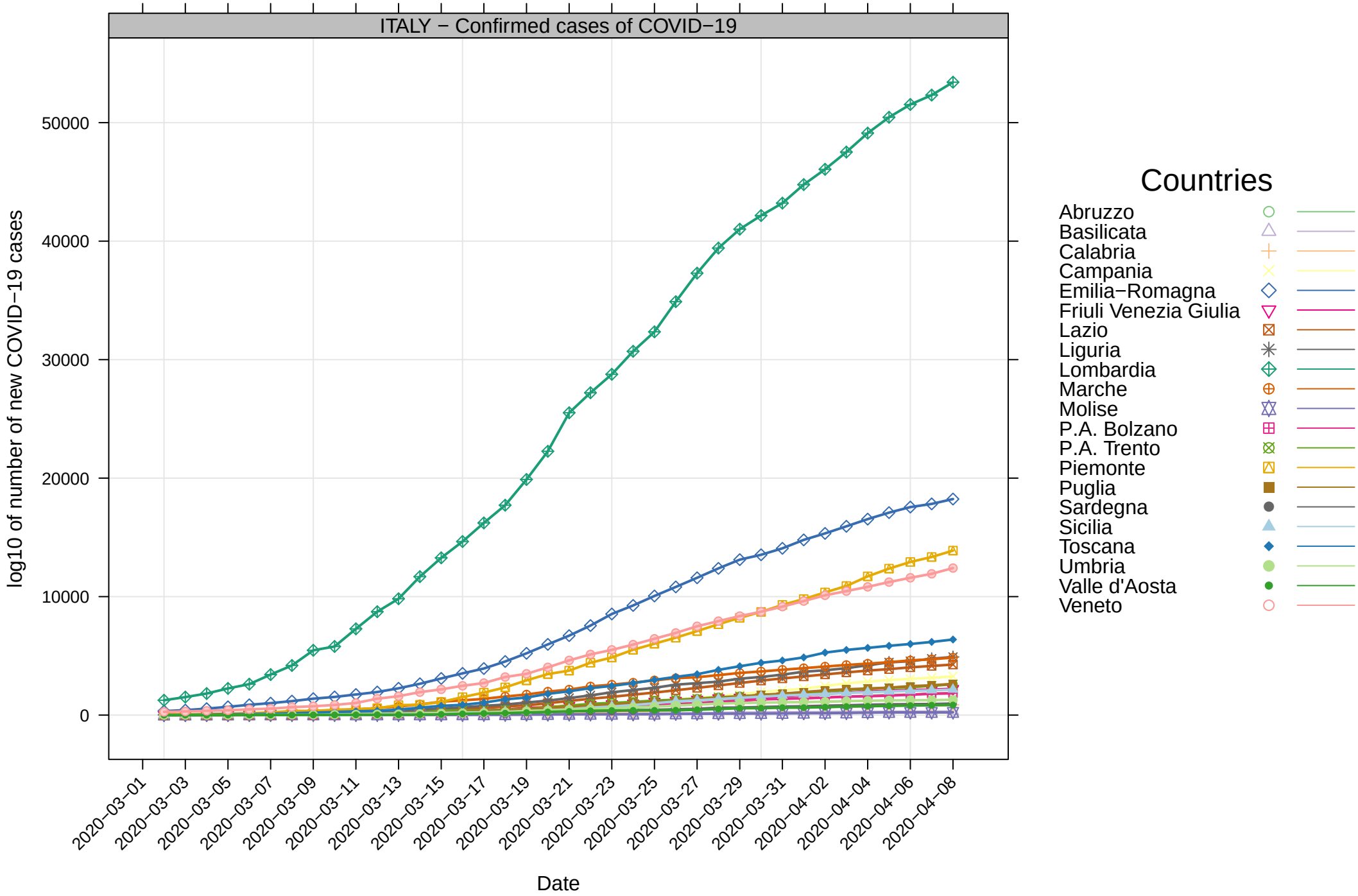

ITALY − Confirmed cases of COVID−19
(last date in this graph is 2020−04−08)
Veneto
Sicilia
Toscana
Umbria
Valle d'Aosta
P.A. Trento
Piemonte
Puglia
Sardegna
confirmed
date
2020−02−24
2020−03−02
2020−03−09
2020−03−16
2020−03−23
2020−03−30
2020−04−06

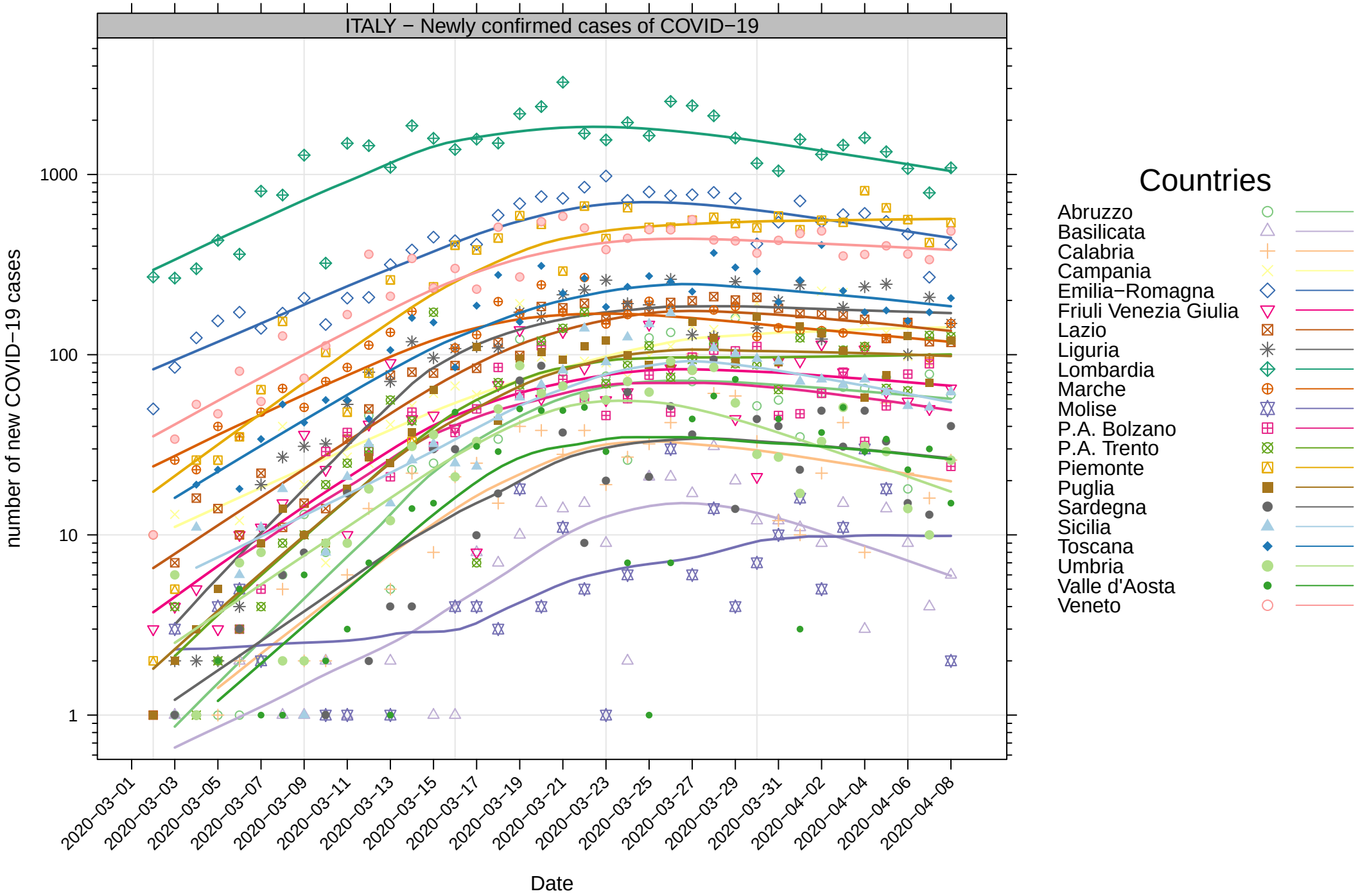

ITALY − Log 10 Confirmed cases of COVID−19
(last date in this graph is 2020−04−08)
Lombardia
Marche
Molise
P.A. Bolzano
Emilia−Romagna
Friuli Venezia Giulia
Lazio
Liguria
Abruzzo
Basilicata
Calabria
Campania
log10(confirmed)
date
2020−02−24
2020−03−02
2020−03−09
2020−03−16
2020−03−23
2020−03−30
2020−04−06

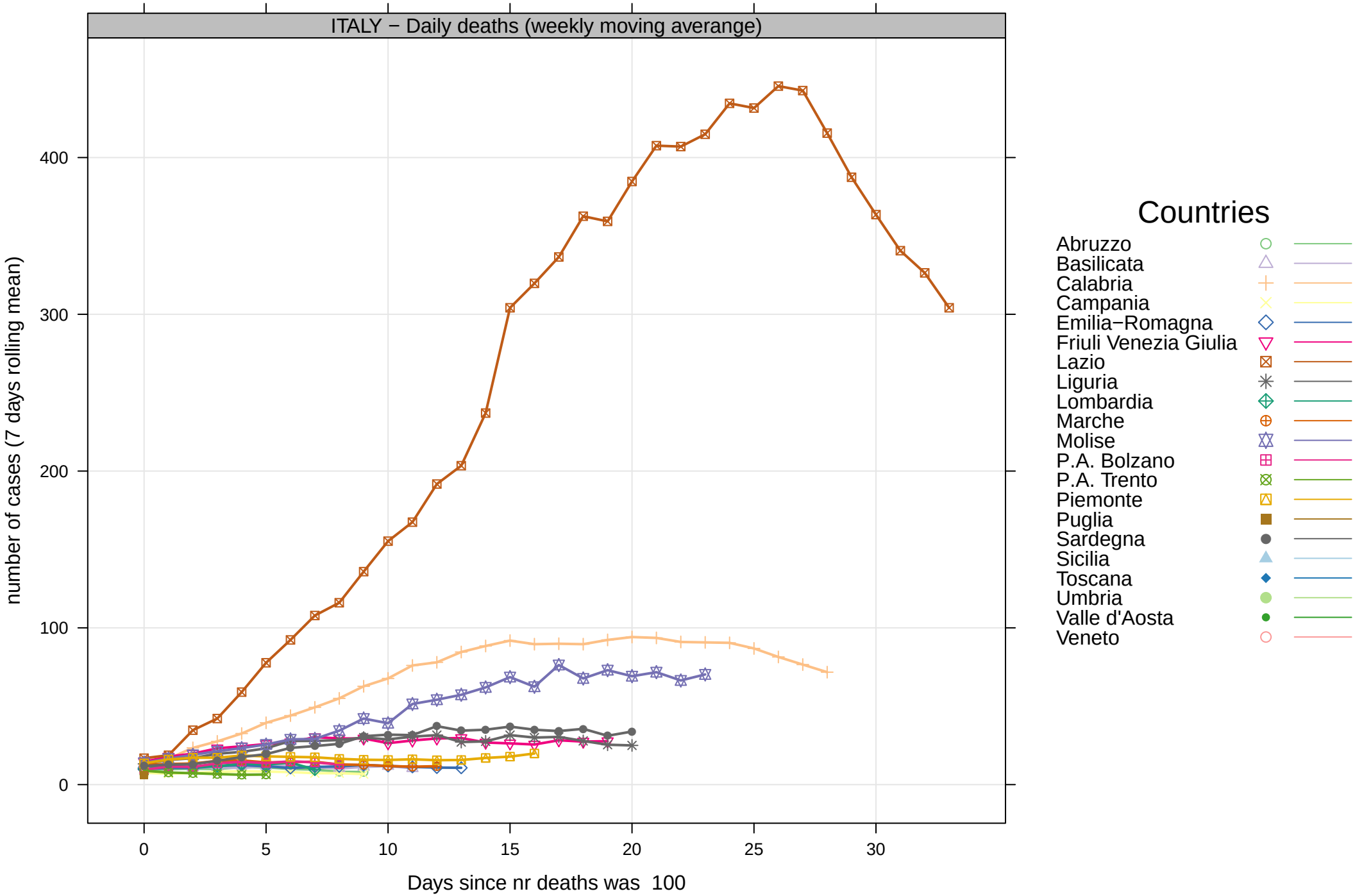

ITALY − Log 10 Confirmed cases of COVID−19
(last date in this graph is 2020−04−08)
Veneto
Sicilia
P.A. Trento
Toscana
Piemonte
Umbria
Puglia
Valle d'Aosta
Sardegna
log10(confirmed)
2020−02−24
2020−03−02
2020−03−09
2020−03−16
2020−03−23
2020−03−30
2020−04−06
date

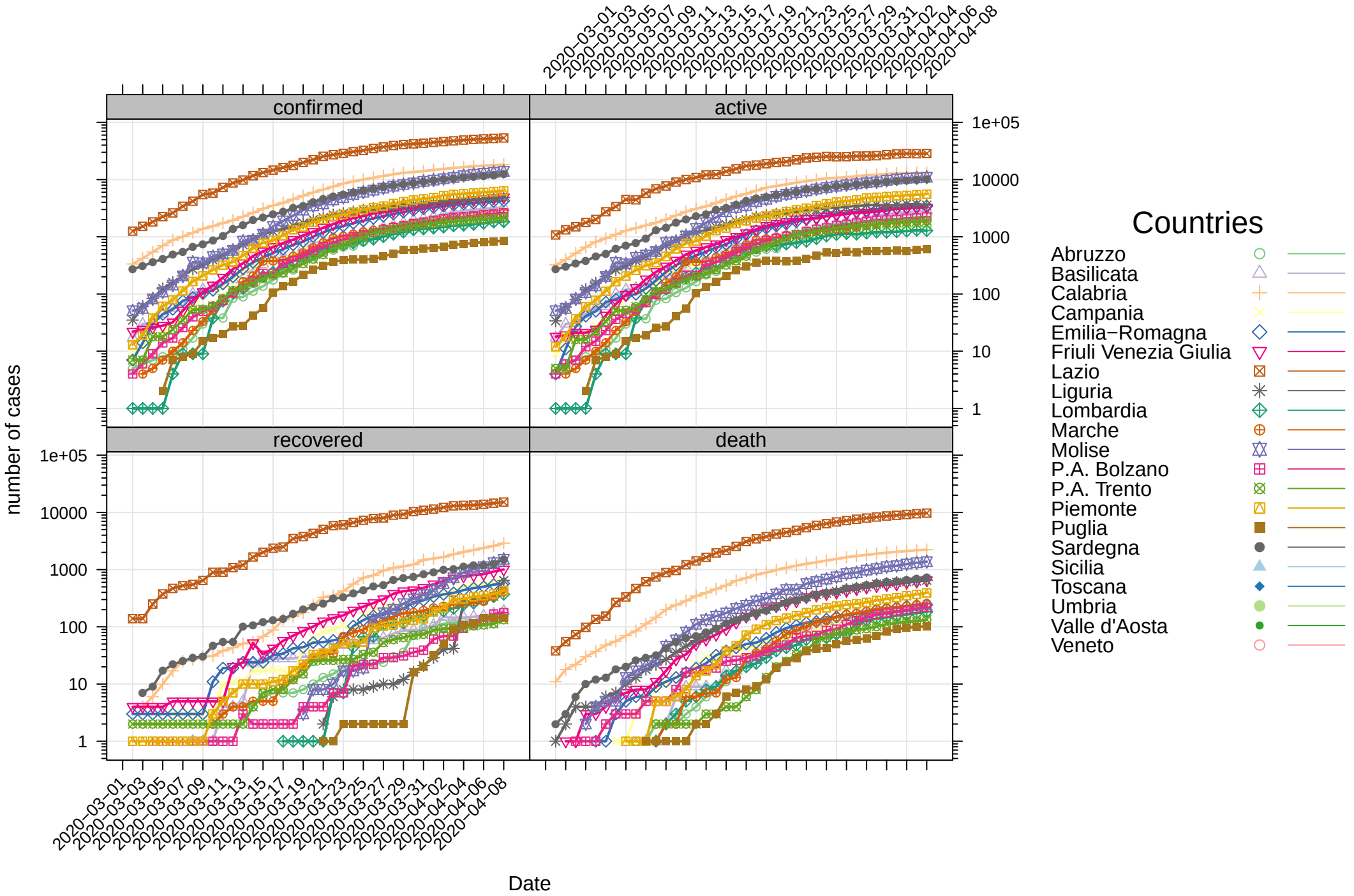

ITALY − Log 10 Active cases of COVID−19
(last date in this graph is 2020−04−08)
Lombardia
Marche
Molise
P.A. Bolzano
Emilia−Romagna
Friuli Venezia Giulia
Lazio
Liguria
Abruzzo
Basilicata
Calabria
Campania
log10(active)
date
2020−02−24
2020−03−02
2020−03−09
2020−03−16
2020−03−23
2020−03−30
2020−04−06

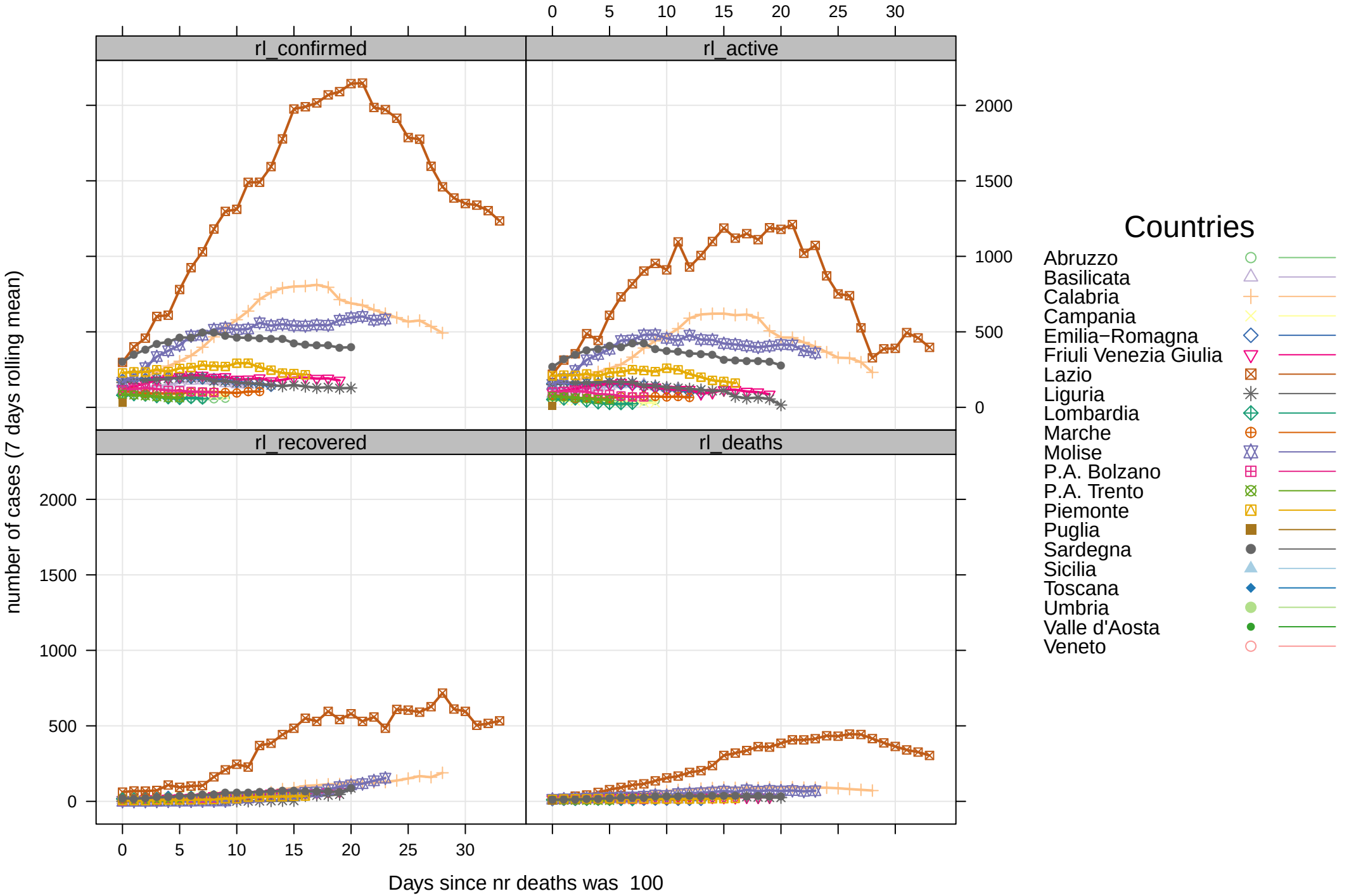

ITALY − Log 10 Active cases of COVID−19
(last date in this graph is 2020−04−08)
Veneto
Sicilia
P.A. Trento
Toscana
Piemonte
Umbria
Puglia
Valle d'Aosta
Sardegna
log10(active)
date
2020−02−24
2020−03−02
2020−03−09
2020−03−16
2020−03−23
2020−03−30
2020−04−06

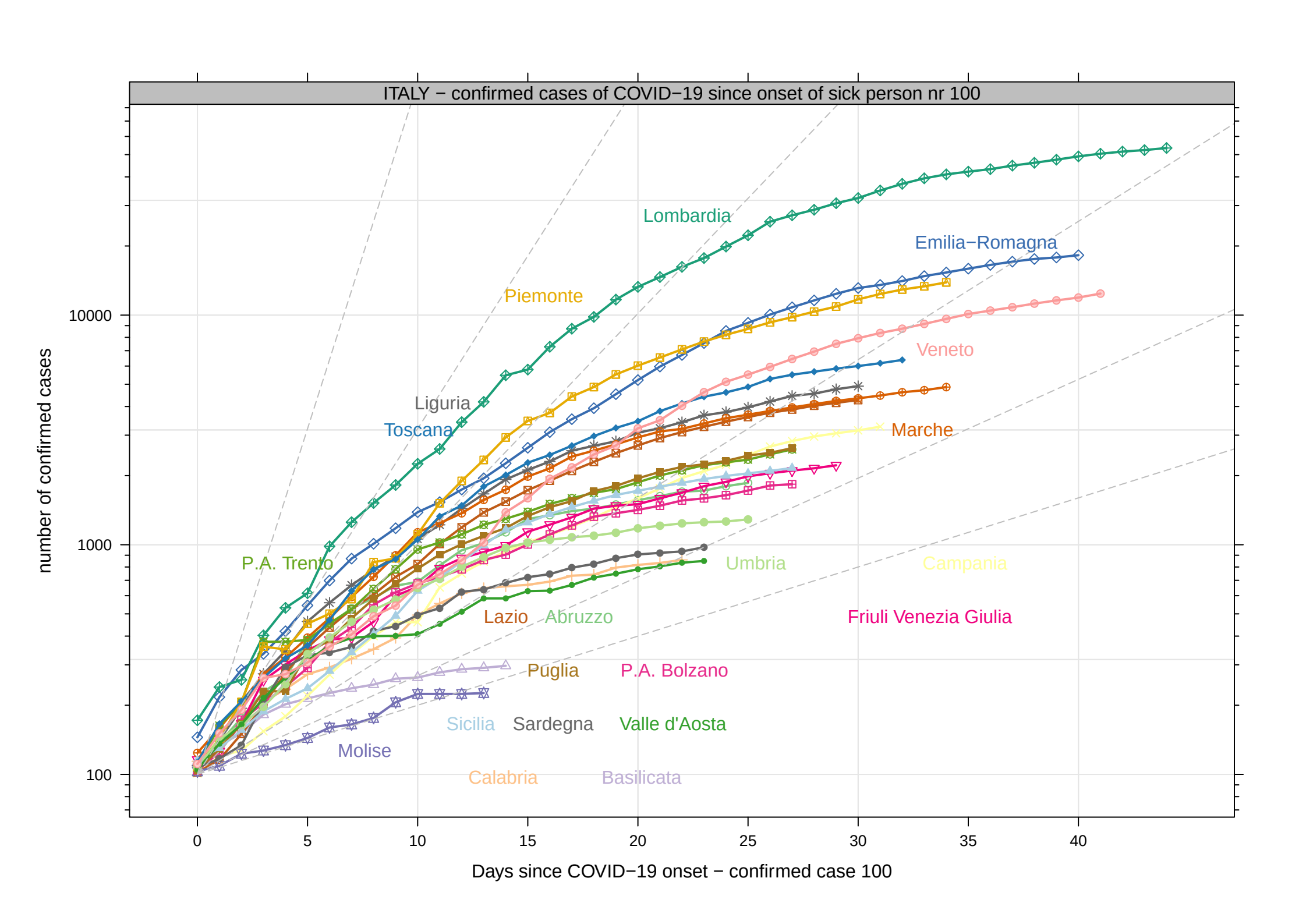

ITALY − Confirmed cases of COVID−19
log10 of number of new COVID−19 cases
50000
40000
30000
20000
10000
0
2020−03−01
2020−03−03
2020−03−05
2020−03−07
2020−03−09
2020−03−11
2020−03−13
2020−03−15
2020−03−17
2020−03−19
2020−03−21
2020−03−23
2020−03−25
2020−03−27
2020−03−29
2020−03−31
2020−04−02
2020−04−04
2020−04−06
2020−04−08
Date
Countries
Abruzzo
Basilicata
Calabria
Campania
Emilia−Romagna
Friuli Venezia Giulia
Lazio
Liguria
Lombardia
Marche
Molise
P.A. Bolzano
P.A. Trento
Piemonte
Puglia
Sardegna
Sicilia
Toscana
Umbria
Valle d'Aosta
Veneto

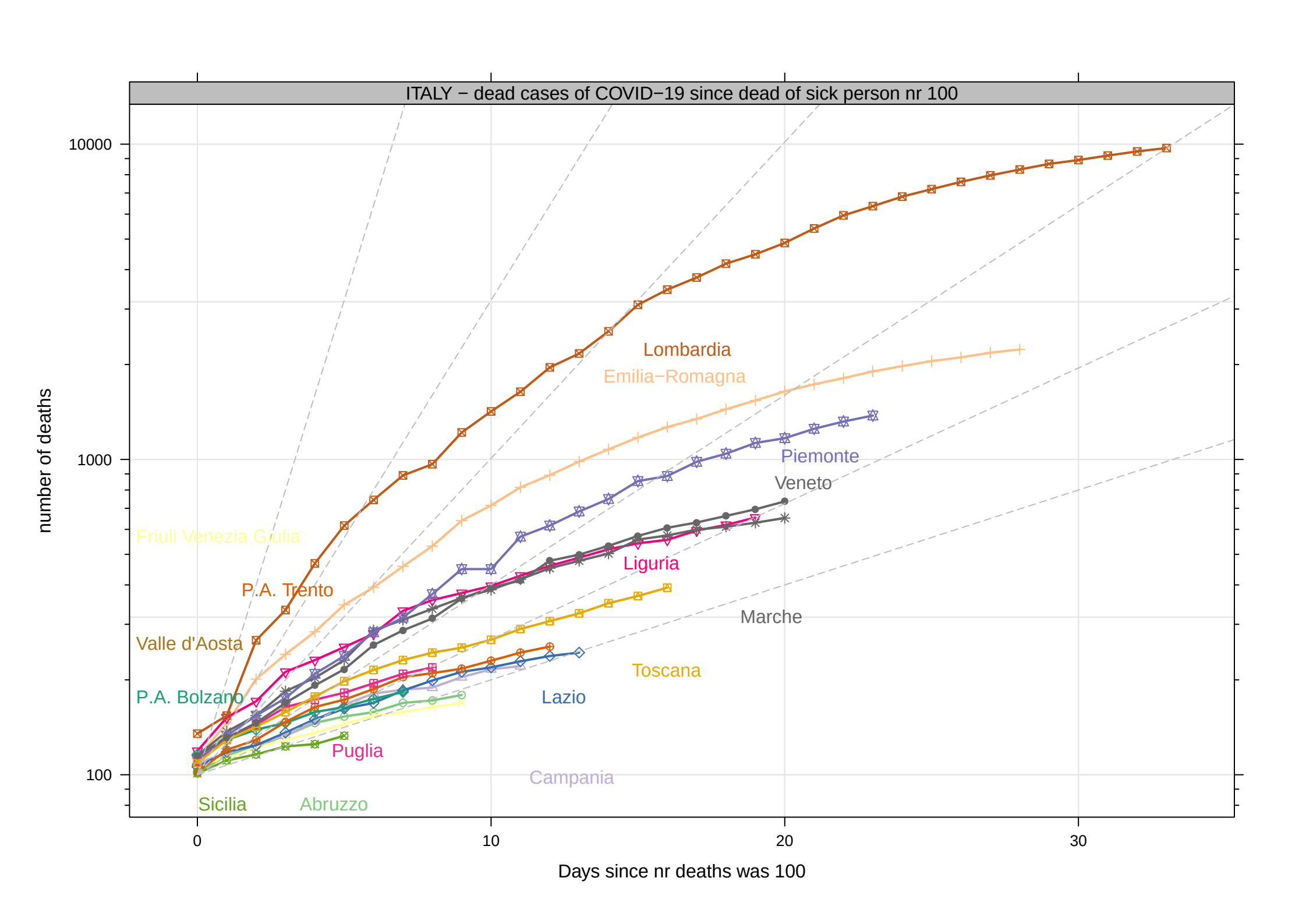

ITALY − Newly confirmed cases of COVID−19
number of new COVID−19 cases
1000
100
10
1
2020−03−01
2020−03−03
2020−03−05
2020−03−07
2020−03−09
2020−03−11
2020−03−13
2020−03−15
2020−03−17
2020−03−19
2020−03−21
2020−03−23
2020−03−25
2020−03−27
2020−03−29
2020−03−31
2020−04−02
2020−04−04
2020−04−06
2020−04−08
Date
Countries
Abruzzo
Basilicata
Calabria
Campania
Emilia−Romagna
Friuli Venezia Giulia
Lazio
Liguria
Lombardia
Marche
Molise
P.A. Bolzano
P.A. Trento
Piemonte
Puglia
Sardegna
Sicilia
Toscana
Umbria
Valle d'Aosta
Veneto

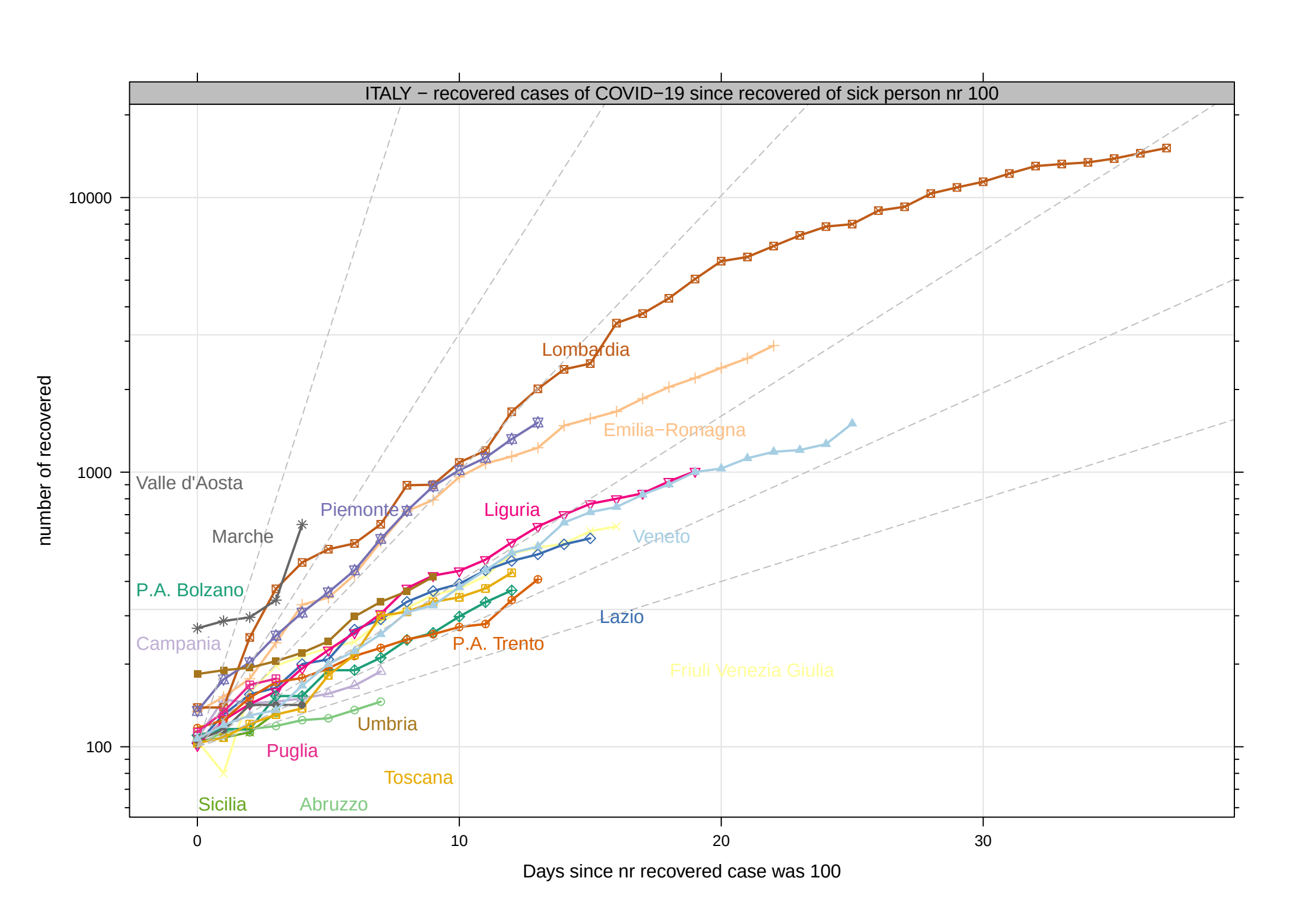

ITALY − Daily deaths (weekly moving averange)
number of cases (7 days rolling mean)
0
100
200
300
400
0
5
10
15
20
25
30
Days since nr deaths was 100
Countries
Abruzzo
Basilicata
Calabria
Campania
Emilia−Romagna
Friuli Venezia Giulia
Lazio
Liguria
Lombardia
Marche
Molise
P.A. Bolzano
P.A. Trento
Piemonte
Puglia
Sardegna
Sicilia
Toscana
Umbria
Valle d'Aosta
Veneto

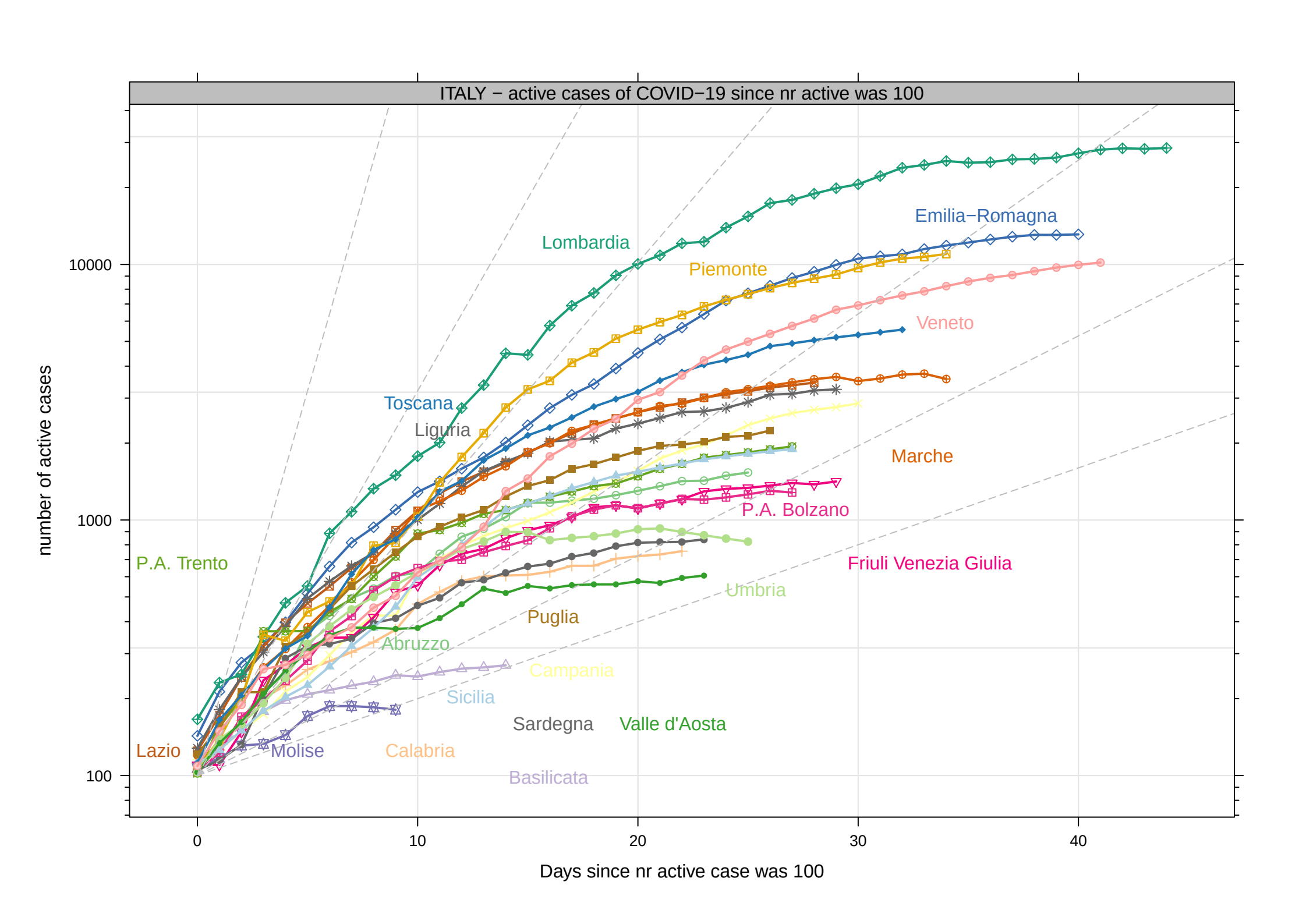

confirmed
active
recovered
death
number of cases
Date
1e+05
10000
1000
100
10
1
2020–03–01
2020–03–03
2020–03–05
2020–03–07
2020–03–09
2020–03–11
2020–03–13
2020–03–15
2020–03–17
2020–03–19
2020–03–21
2020–03–23
2020–03–25
2020–03–27
2020–03–29
2020–03–31
2020–04–02
2020–04–04
2020–04–06
2020–04–08
Countries
Abruzzo
Basilicata
Calabria
Campania
Emilia−Romagna
Friuli Venezia Giulia
Lazio
Liguria
Lombardia
Marche
Molise
P.A. Bolzano
P.A. Trento
Piemonte
Puglia
Sardegna
Sicilia
Toscana
Umbria
Valle d'Aosta
Veneto

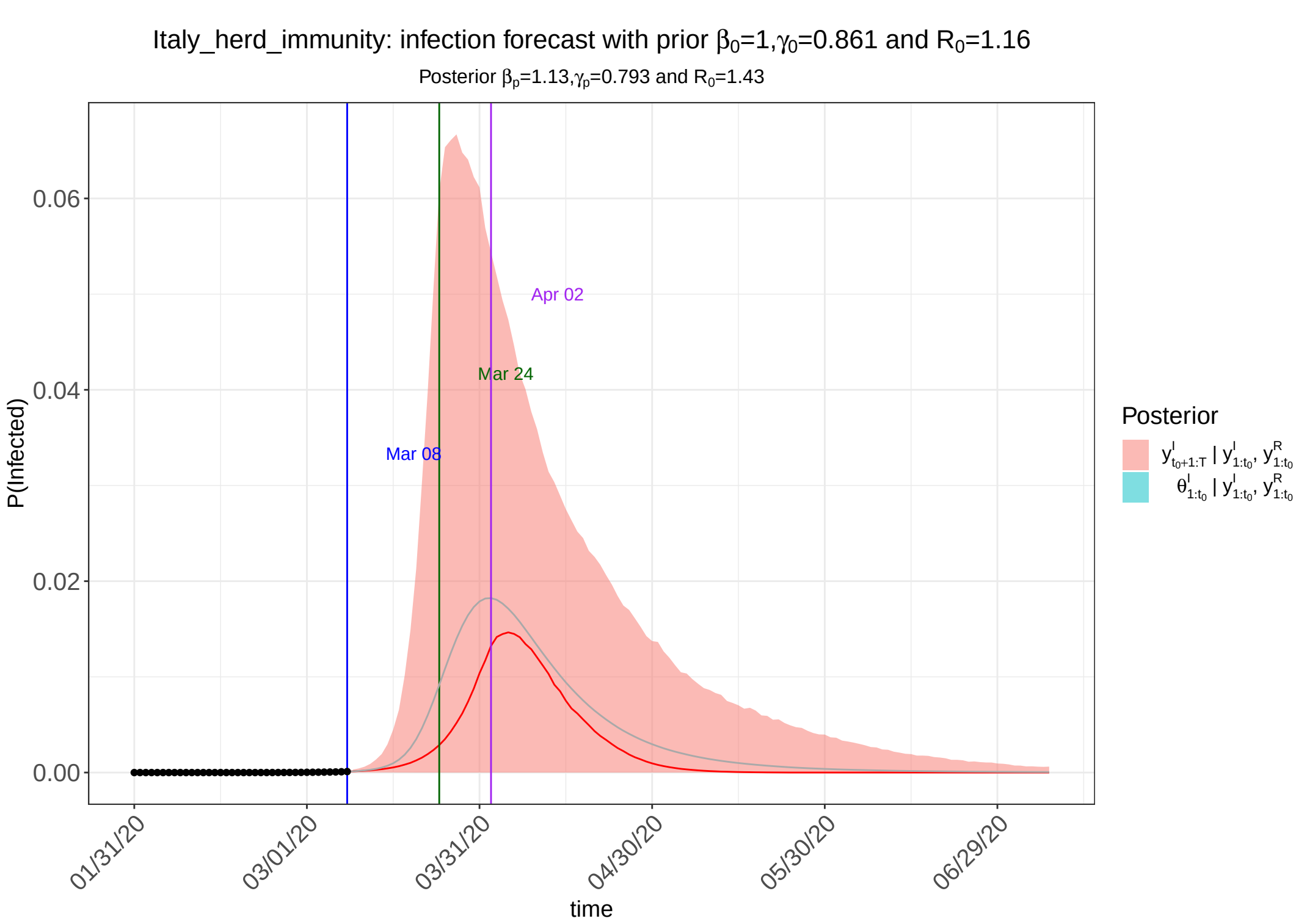

rl_confirmed
rl_active
rl_recovered
rl_deaths
number of cases (7 days rolling mean)
Days since nr deaths was 100
0
5
10
15
20
25
30
0
500
1000
1500
2000
Countries
Abruzzo
Basilicata
Calabria
Campania
Emilia−Romagna
Friuli Venezia Giulia
Lazio
Liguria
Lombardia
Marche
Molise
P.A. Bolzano
P.A. Trento
Piemonte
Puglia
Sardegna
Sicilia
Toscana
Umbria
Valle d'Aosta
Veneto

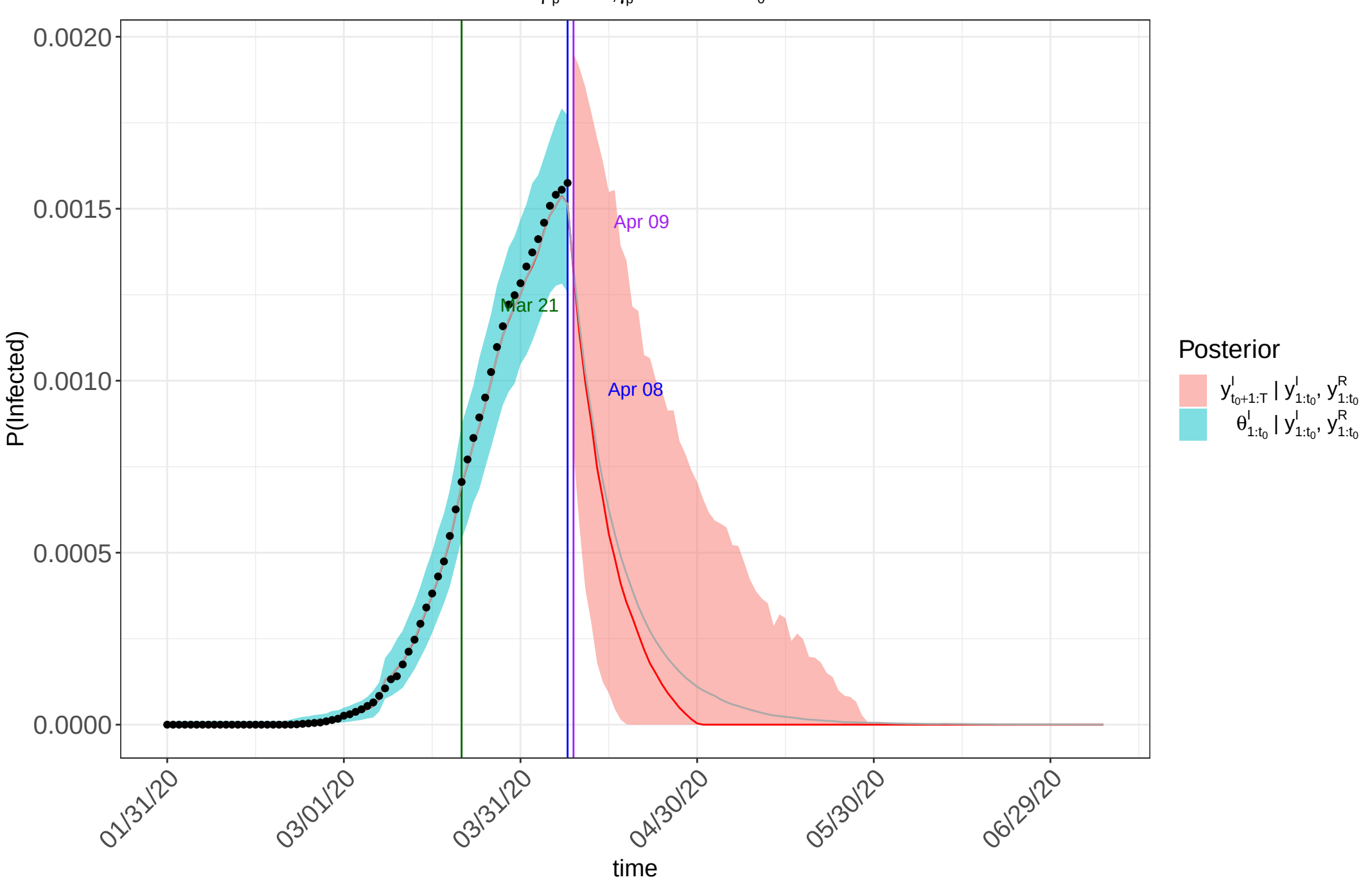

ITALY − confirmed cases of COVID−19 since onset of sick person nr 100
number of confirmed cases
10000
1000
100
0
5
10
15
20
25
30
35
40
Days since COVID−19 onset − confirmed case 100
Lombardia
Emilia−Romagna
Piemonte
Veneto
Liguria
Toscana
Marche
P.A. Trento
Umbria
Campania
Lazio
Abruzzo
Friuli Venezia Giulia
Puglia
P.A. Bolzano
Sicilia
Sardegna
Valle d'Aosta
Molise
Calabria
Basilicata

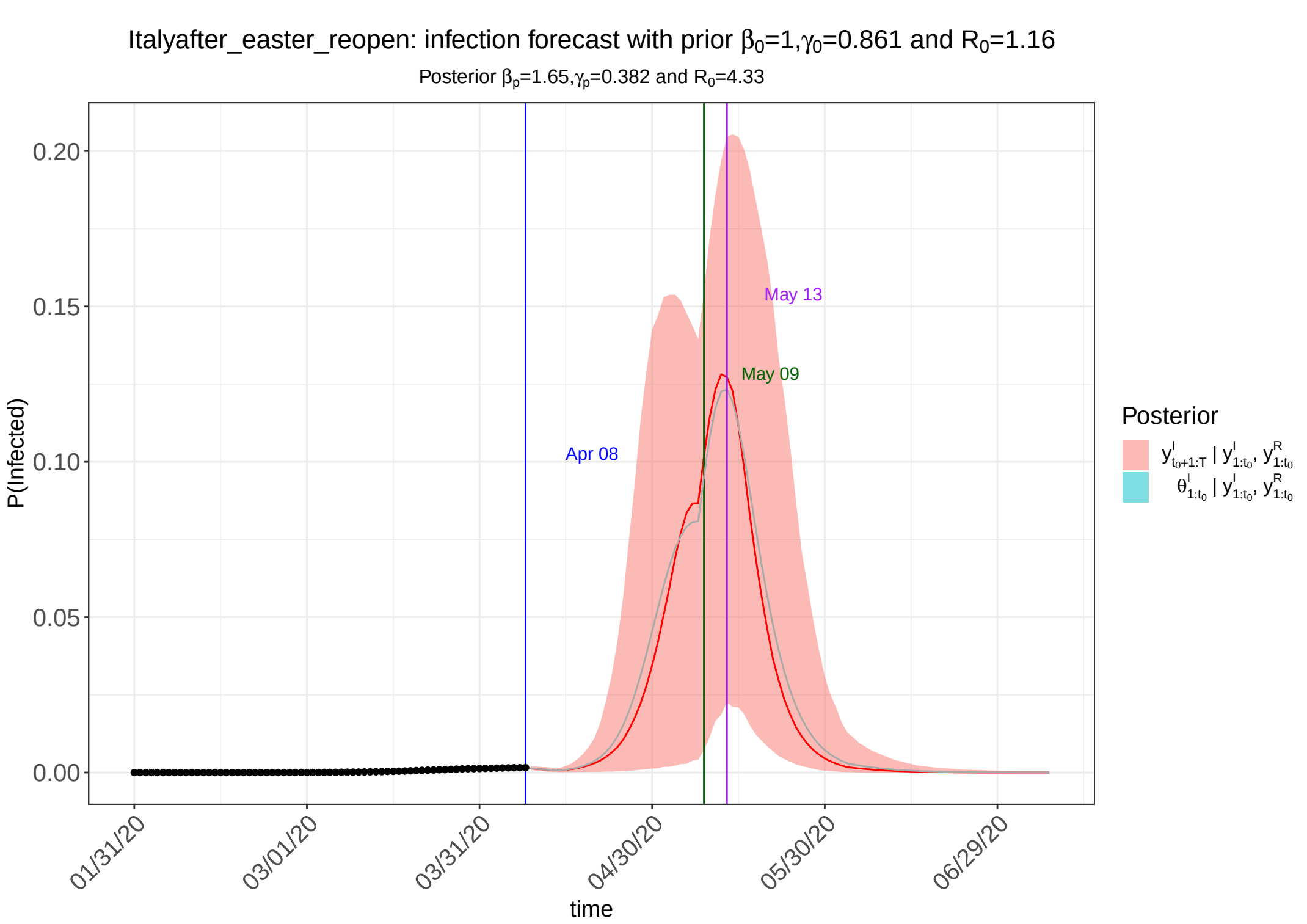

ITALY − dead cases of COVID−19 since dead of sick person nr 100
number of deaths
10000
1000
100
0
10
20
30
Days since nr deaths was 100
Lombardia
Emilia−Romagna
Piemonte
Veneto
Liguria
Marche
Toscana
Lazio
Campania
Puglia
Abruzzo
Sicilia
P.A. Trento
Valle d'Aosta
P.A. Bolzano
Friuli Venezia Giulia

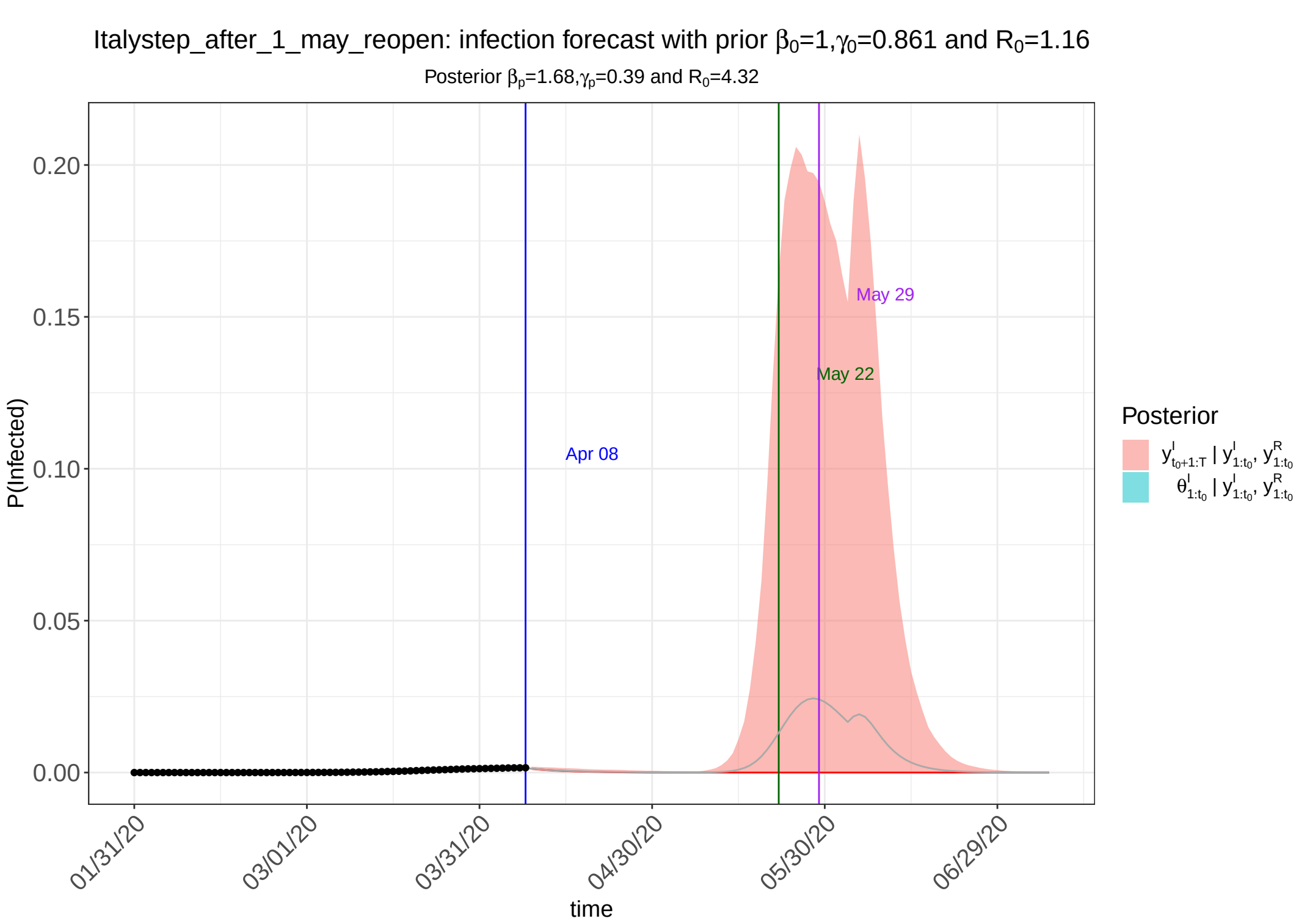

ITALY − recovered cases of COVID−19 since recovered of sick person nr 100
number of recovered
10000
1000
100
0
10
20
30
Days since nr recovered case was 100
Lombardia
Emilia−Romagna
Valle d'Aosta
Piemonte
Liguria
Marche
Veneto
P.A. Bolzano
Lazio
Campania
P.A. Trento
Friuli Venezia Giulia
Umbria
Puglia
Toscana
Sicilia
Abruzzo

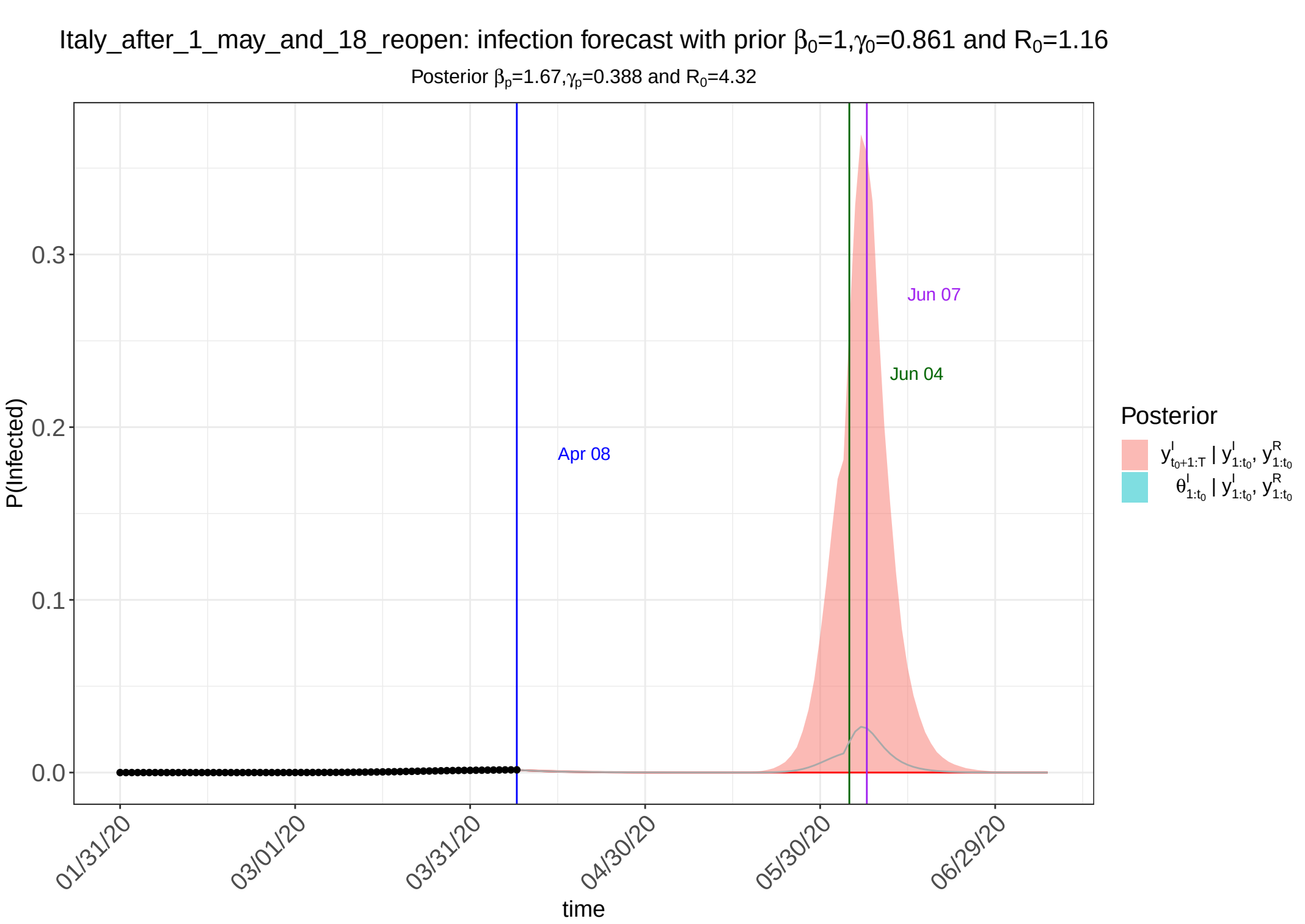

ITALY − active cases of COVID−19 since nr active was 100
number of active cases
10000
1000
100
0
10
20
30
40
Days since nr active case was 100
Lombardia
Emilia−Romagna
Piemonte
Veneto
Toscana
Liguria
Marche
P.A. Bolzano
P.A. Trento
Friuli Venezia Giulia
Umbria
Puglia
Abruzzo
Campania
Sicilia
Sardegna
Valle d'Aosta
Lazio
Molise
Calabria
Basilicata

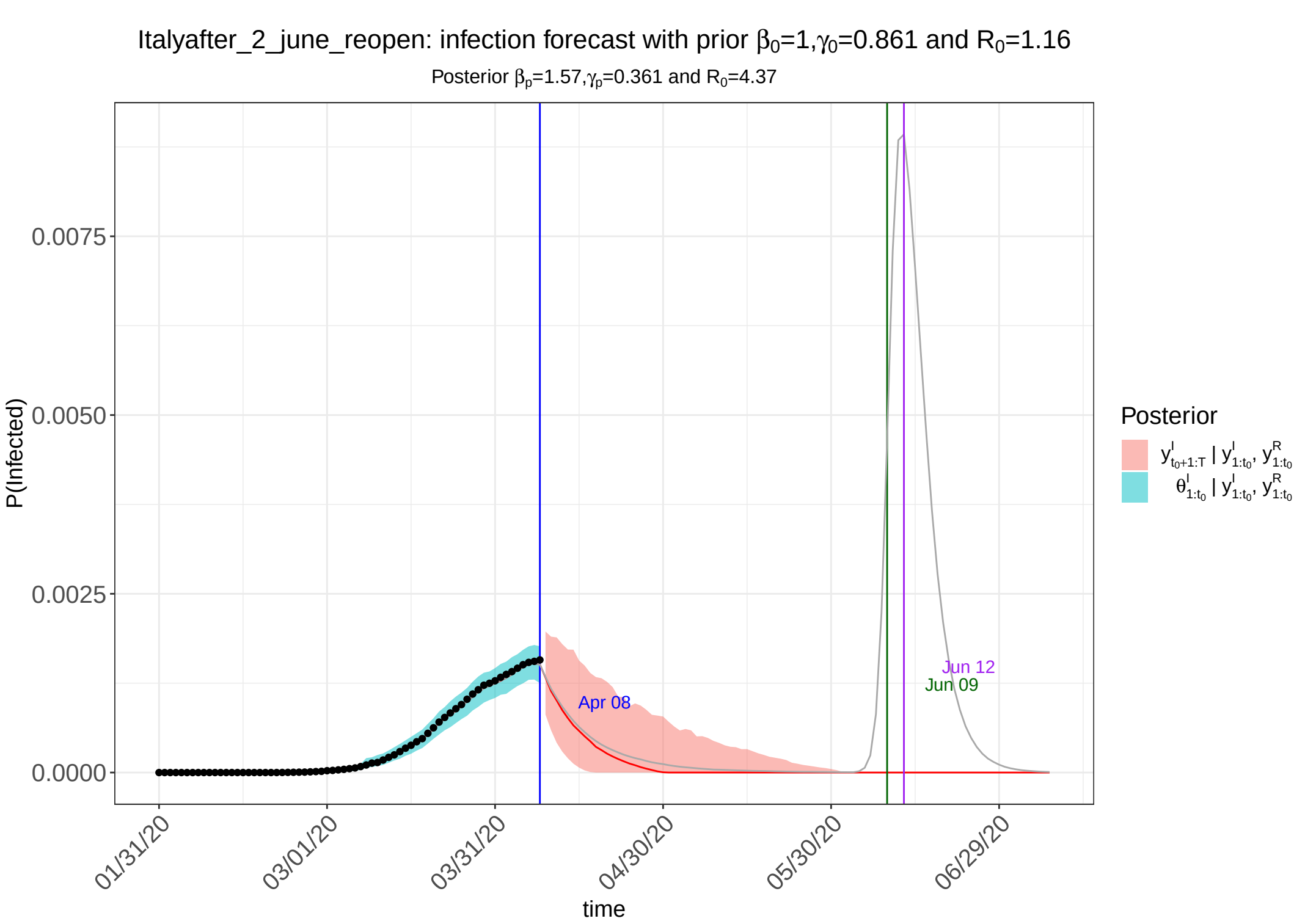

Italy_herd_immunity: infection forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
Posterior β_p=1.13,γ_p=0.793 and R_0=1.43
P(Infected)
0.06
0.04
0.02
0.00
Apr 02
Mar 24
Mar 08
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^I_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^I_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$

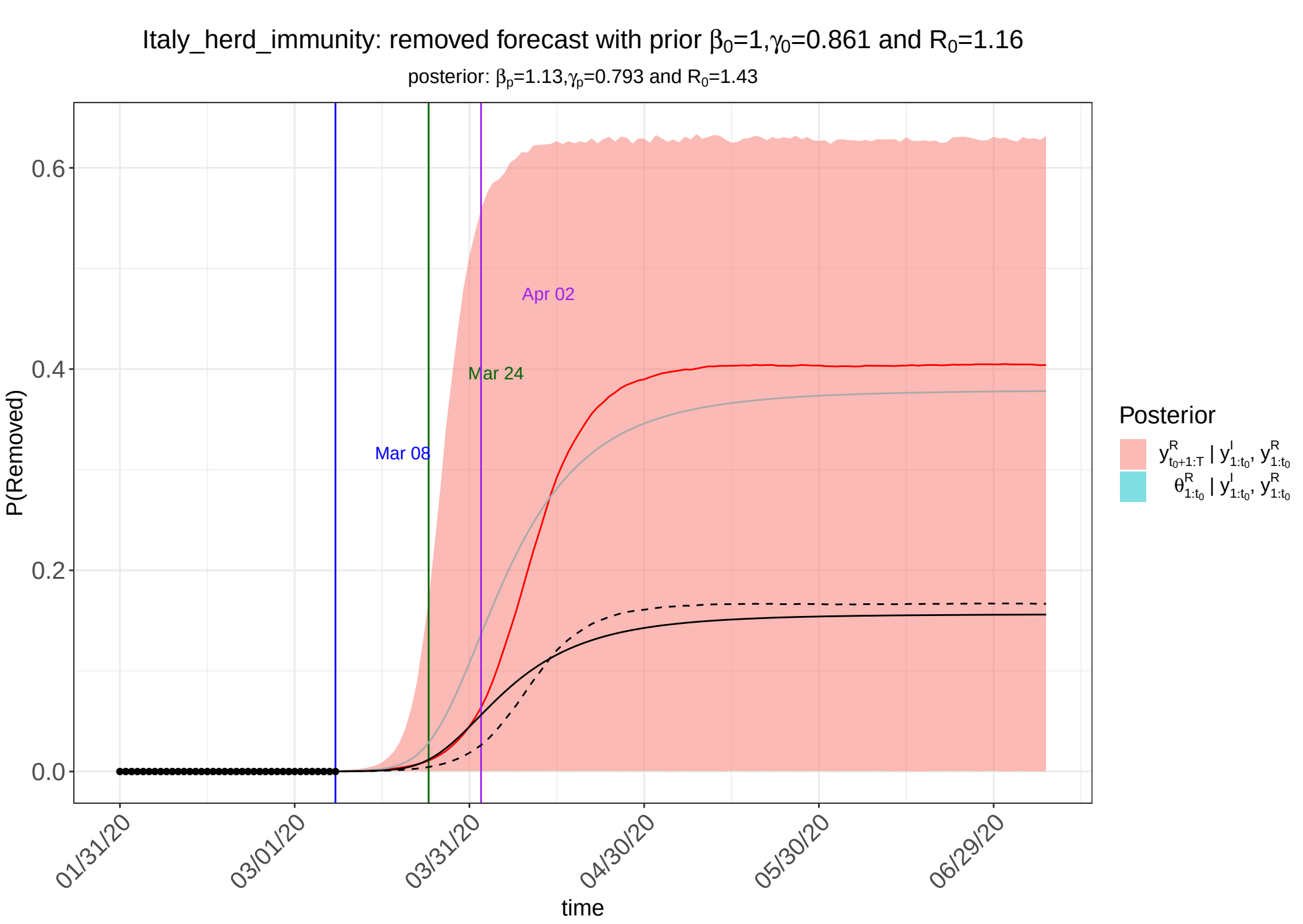

Italy_lockdown: infection forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
Posterior β_p=1.59,γ_p=0.369 and R_0=4.33
0.0020
0.0015
0.0010
0.0005
0.0000
P(Infected)
Apr 09
Mar 21
Apr 08
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^I_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^I_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$

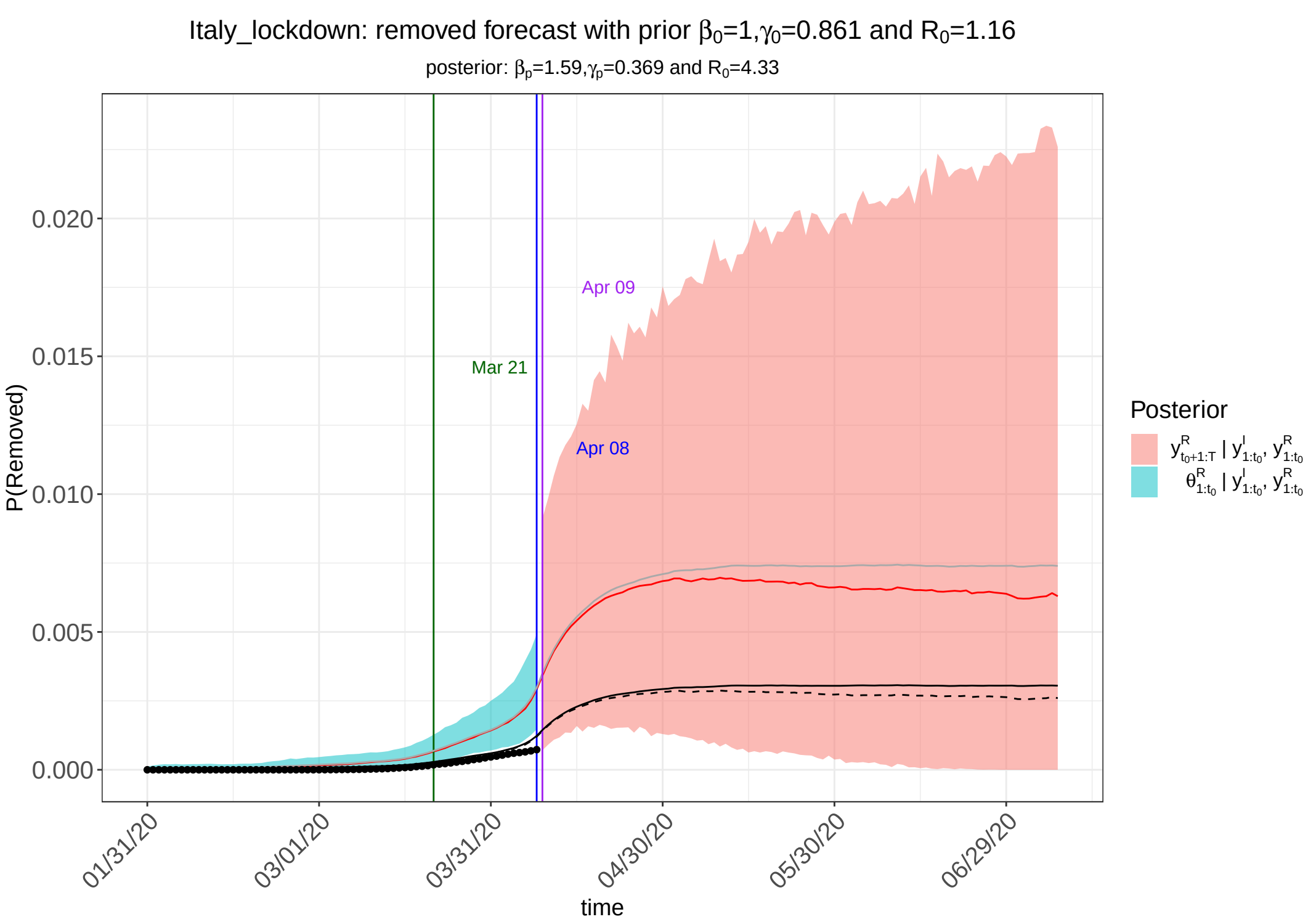

Italyafter_easter_reopen: infection forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
Posterior β_p=1.65,γ_p=0.382 and R_0=4.33
P(Infected)
0.20
0.15
0.10
0.05
0.00
Apr 08
May 09
May 13
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^I_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^I_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$

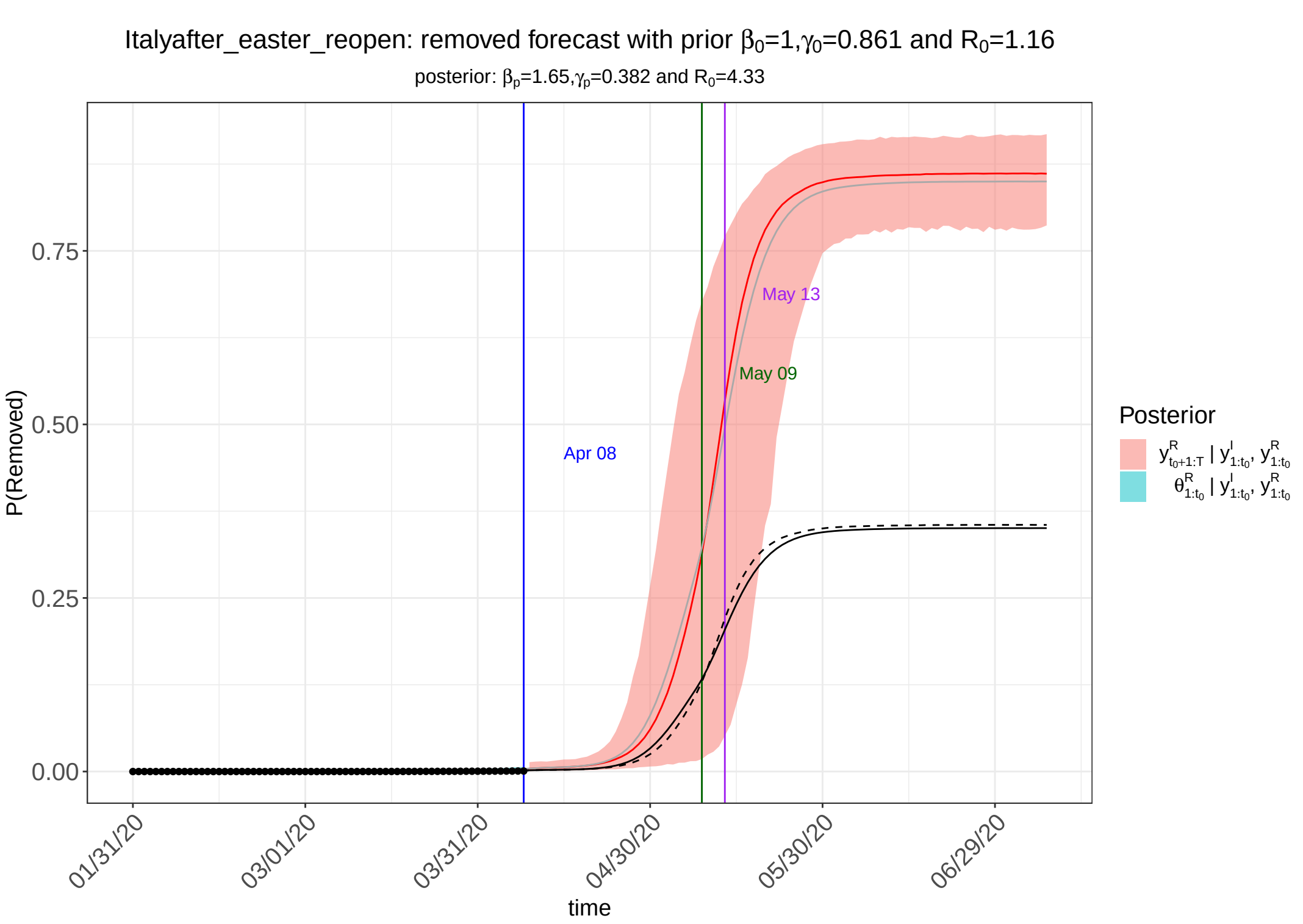

Italystep_after_1_may_reopen: infection forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
Posterior β_p=1.68,γ_p=0.39 and R_0=4.32
P(Infected)
0.20
0.15
0.10
0.05
0.00
Apr 08
May 22
May 29
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^I_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^I_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$

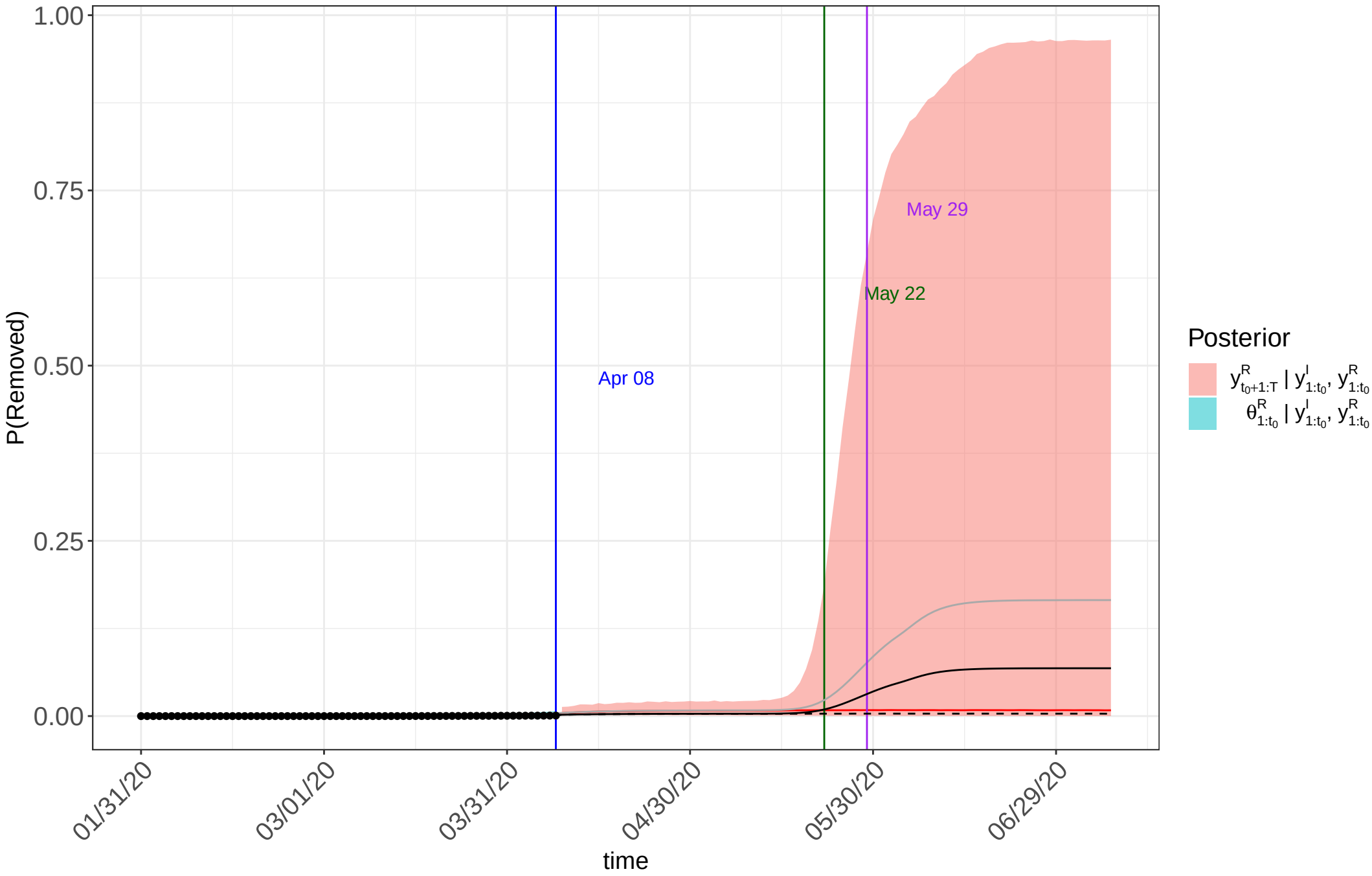

Italy_after_1_may_and_18_reopen: infection forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
Posterior β_p=1.67,γ_p=0.388 and R_0=4.32
P(Infected)
0.0
0.1
0.2
0.3
Apr 08
Jun 04
Jun 07
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^I_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^I_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$

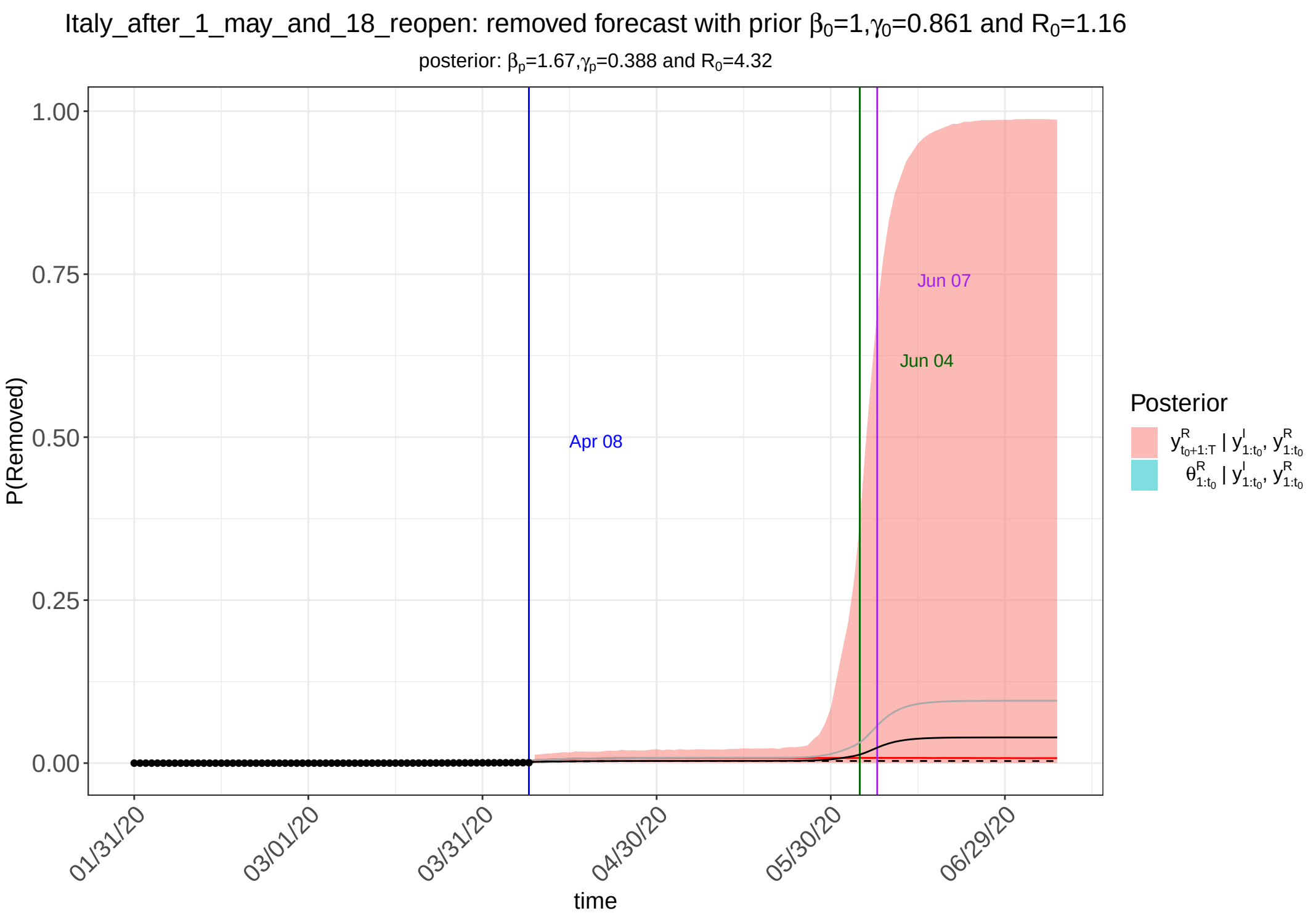

Italyafter_2_june_reopen: infection forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
Posterior β_p=1.57,γ_p=0.361 and R_0=4.37
P(Infected)
0.0075
0.0050
0.0025
0.0000
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Apr 08
Jun 09
Jun 12
Posterior
$y^I_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^I_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$

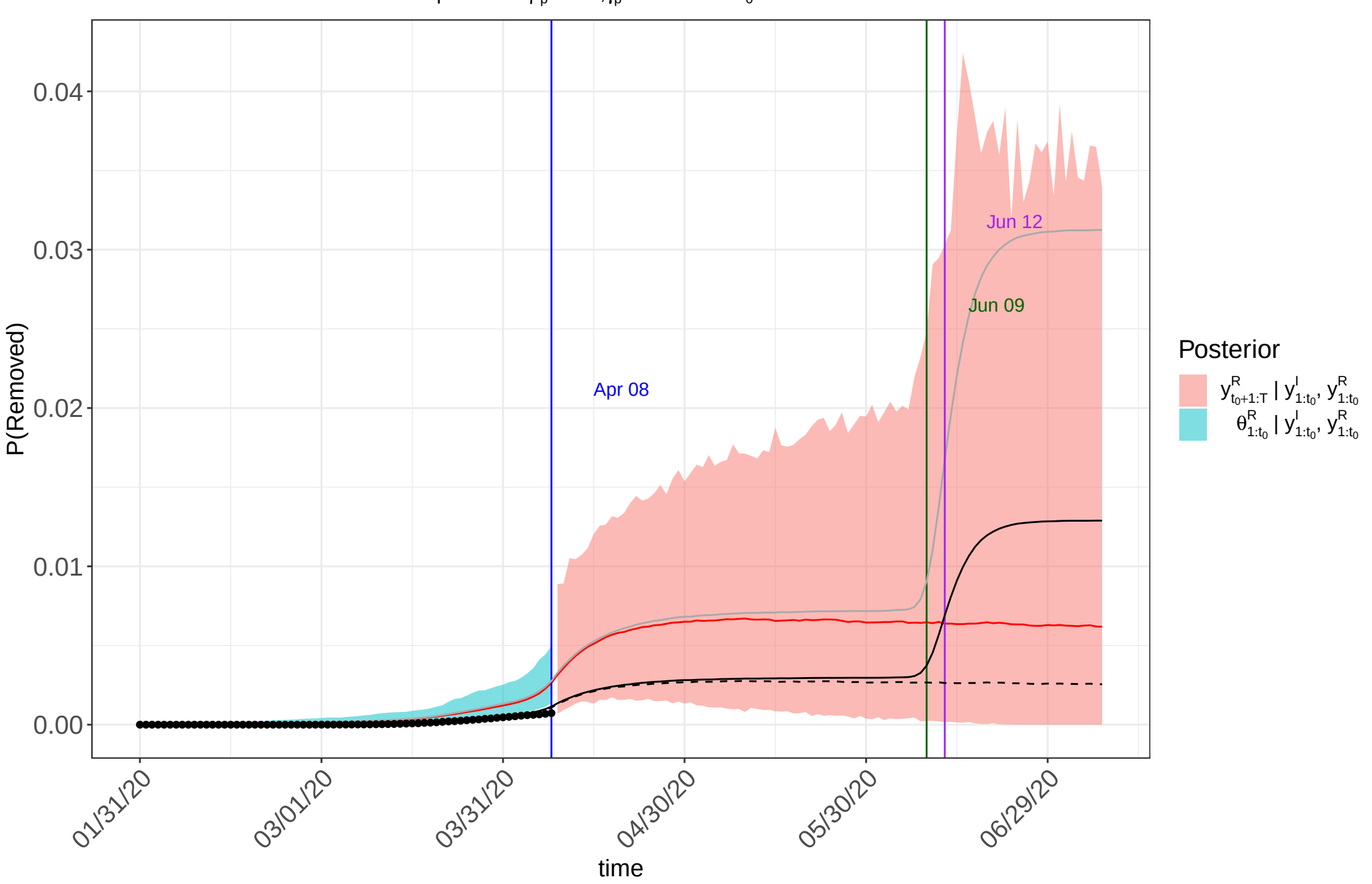

Italy_herd_immunity: removed forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
posterior: β_p=1.13,γ_p=0.793 and R_0=1.43
Apr 02
Mar 24
Mar 08
P(Removed)
0.0
0.2
0.4
0.6
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^R_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^R_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$


Italy_lockdown: removed forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
posterior: β_p=1.59,γ_p=0.369 and R_0=4.33
Apr 09
Mar 21
Apr 08
P(Removed)
0.020
0.015
0.010
0.005
0.000
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^R_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^R_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$


Italyafter_easter_reopen: removed forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
posterior: β_p=1.65,γ_p=0.382 and R_0=4.33
P(Removed)
0.00
0.25
0.50
0.75
Apr 08
May 09
May 13
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^R_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^R_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$


Italystep_after_1_may_reopen: removed forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
posterior: β_p=1.68,γ_p=0.39 and R_0=4.32
1.00
0.75
0.50
0.25
0.00
P(Removed)
Apr 08
May 22
May 29
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^R_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^R_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$


Italy_after_1_may_and_18_reopen: removed forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
posterior: β_p=1.67,γ_p=0.388 and R_0=4.32
P(Removed)
1.00
0.75
0.50
0.25
0.00
Apr 08
Jun 04
Jun 07
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^R_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^R_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$


Italyafter_2_june_reopen: removed forecast with prior β_0=1,γ_0=0.861 and R_0=1.16
posterior: β_p=1.57,γ_p=0.361 and R_0=4.37
P(Removed)
0.04
0.03
0.02
0.01
0.00
Apr 08
Jun 09
Jun 12
01/31/20
03/01/20
03/31/20
04/30/20
05/30/20
06/29/20
time
Posterior
$y^R_{t_0+1:T} \mid y^I_{1:t_0}, y^R_{1:t_0}$
$\theta^R_{1:t_0} \mid y^I_{1:t_0}, y^R_{1:t_0}$