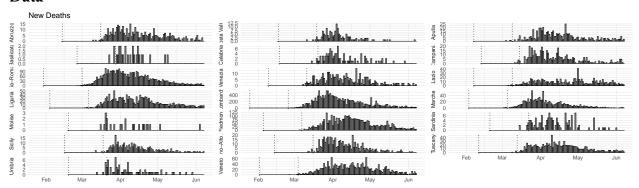
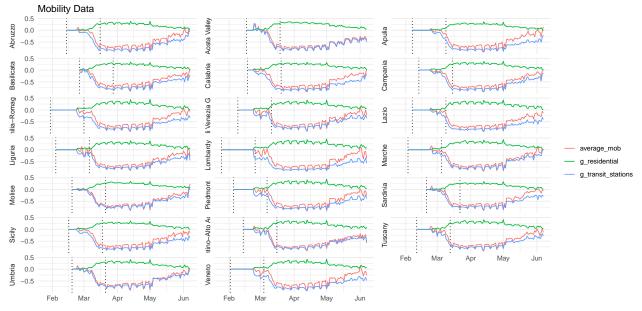
# Italy

### Data



Vertical dotted lines represent the first seeding day and the epidemic start date.



Vertical dotted lines represent the first seeding day and the epidemic start date.

## **Analysis**

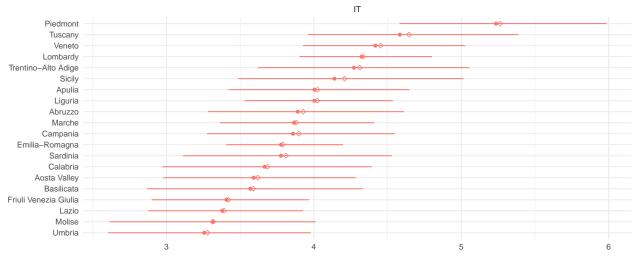
Number of divergent transitions = 0

Maximum  $\hat{R} = 1.016783$ 

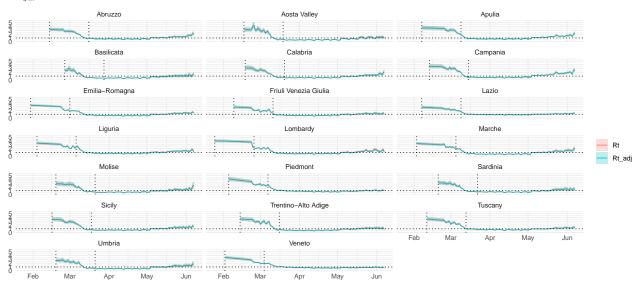
Minimum Bulk ESS = 447.3264

Minimum Tail ESS = 520.7282









Vertical dotted lines represent the first seeding day and the epidemic start date.

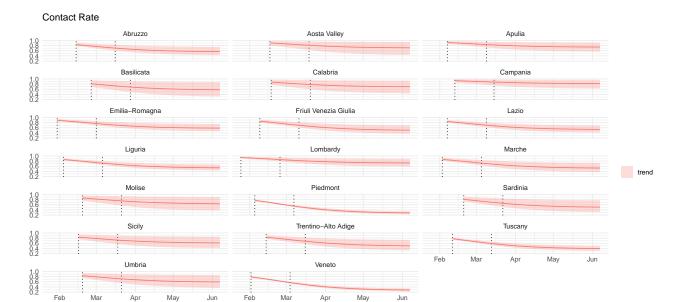
Ribbons represent the 80% credible intervals.

Contact rate function:

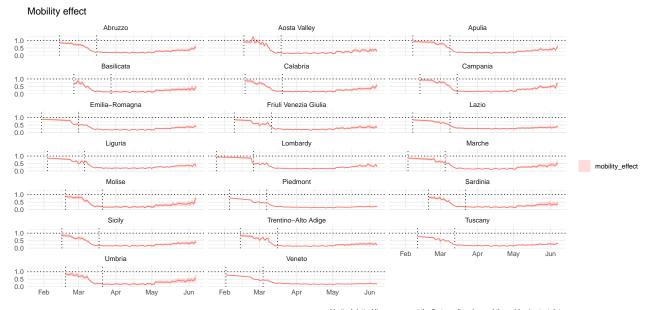
$$cr(t;t^*,\lambda_j,\kappa) = \lambda_j + \frac{1-\lambda_j}{1+\exp(\kappa(t-t^*))}$$

where

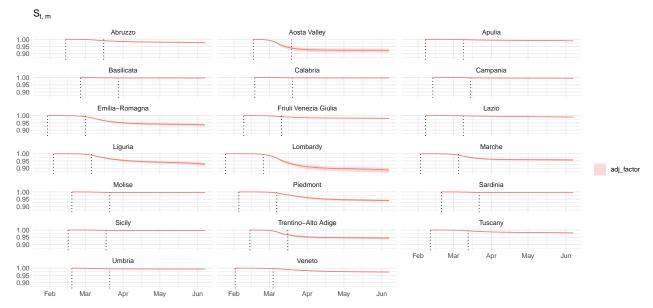
$$\lambda_j \sim \text{Beta}(3,1)$$
 $\kappa \sim \text{NegHalfNormal}(0,1).$ 



Vertical dotted lines represent the first seeding day and the epidemic start date. Ribbons represent the 80% credible intervals.

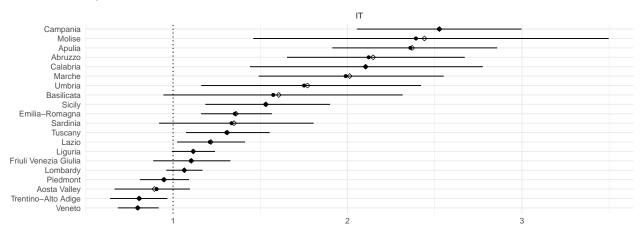


Vertical dotted lines represent the first seeding day and the epidemic start date. Ribbons represent the 80% credible intervals.



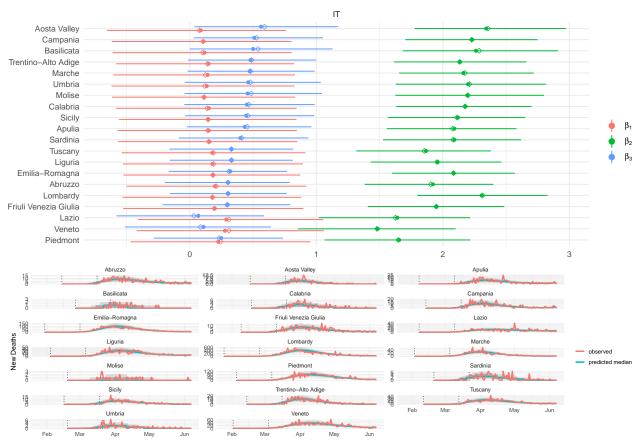
Vertical dotted lines represent the first seeding day and the epidemic start date. Ribbons represent the 80% credible intervals.

#### $R_{t,m}$ on the last day



Mobility linear model:  $\beta_1 \cdot X_{residential} + \beta_2 \cdot X_{transit} + \beta_3 \cdot X_{average}$ .





#### Solid black line: observed new deaths. Grey ribbon: posterior predicted new deaths. Vertical dotted lines represent the first seeding day and the epidemic start date.

#### **Imputed Cases**

