Pandemic velocity: forecasting COVID-19 in the U.S. with a machine learning & Bayesian time series compartmental model, supplemental material

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Table S1. Parameter Values & Distributions

Model	Parameter	Value/Distribution
SIRD	ρ^{-1}	$N(10, 1)$
Velocity Model	μ_μ	$N(0, 0.1)$
Velocity Model	μ_ϕ	$U(0, 1)$
Velocity Model	μ_τ	$Gamma(0.001, 0.001)$
Velocity Model	σ^2_μ	0.01
Velocity Model	σ^2_ϕ	0.05
Velocity Model	σ^2_τ	1
Velocity Model	`n.iter`	500,000
Velocity Model	`n.burnin`	10,000
Velocity Model	`n.thin`	1500
Random Forest	`ntree`	500
Random Forest	`mtry`	9
Random Forest	`nodesize`	5

Values and prior distributions for the parameters of each component of the model. The ρ parameter governs flow out of the I compartment of the SIRD model. Its inverse, ρ^{-1}, is interpreted as the expected amount of time until an infected individual recovers or dies.