

Predicciones sobre CoViD-19

Manuel Febrero-Bande

Dpt. de Estadística, Análisis Matemático y Optimización
Univ. de Santiago de Compostela

9 de mayo de 2020



DEPARTAMENTO DE ESTATÍSTICA,
ANÁLISE MATEMÁTICA E OPTIMIZACIÓN



- Predicciones

- Predicciones Fallecidos

3 Panorama internacional

Tabla Previsión Confirmados: Mod. Lineal.

	Last	H1	H2	H3	H4	H5
España	262783	264440	265847	267069	268384	269614
Andalucía	15228	15398	15567	15748	15940	16141
Aragón	6656	6725	6796	6876	6963	7056
Asturias	3183	3212	3241	3272	3303	3337
Islas Baleares	2042	2054	2066	2077	2089	2100
Canarias	2250	2260	2268	2276	2283	2290
Cantabria	2681	2698	2713	2730	2747	2765
Castilla.La.Mancha	23293	23640	23989	24353	24739	25137
Castilla.y.León	23437	23798	24178	24585	25020	25476
Cataluña	53578	54017	54440	54856	55281	55724
Ceuta	169	171	174	177	180	183
Comunidad.Valenciana	13676	13853	14032	14218	14413	14618
Extremadura	3886	3922	3957	3994	4035	4078
Galicia	10574	10702	10837	10983	11135	11295
Madrid	69375	69631	69848	70045	70212	70381
Melilla	132	133	133	134	134	135
Murcia	2263	2306	2354	2409	2466	2526
Navarra	7442	7601	7781	7985	8212	8455
País.Vasco	17553	17773	18008	18265	18546	18846
La.Rioja	5365	5390	5414	5437	5459	5481

Cuadro: Previsión Confirmados: Mod. Lineal - Horizonte 1 – 5 días.

Tabla Ratio Incr. Confirmados: Mod. Lineal.

	Last	H1	H2	H3	H4	H5
España	0.011	0.006	0.012	0.016	0.021	0.026
Andalucía	0.013	0.011	0.022	0.034	0.047	0.060
Aragón	0.013	0.010	0.021	0.033	0.046	0.060
Asturias	0.010	0.009	0.018	0.028	0.038	0.049
Islas.Baleares	0.005	0.006	0.012	0.017	0.023	0.029
Canarias	0.003	0.004	0.008	0.011	0.015	0.018
Cantabria	0.007	0.006	0.012	0.018	0.025	0.031
Castilla.La.Mancha	0.017	0.015	0.030	0.046	0.062	0.079
Castilla.y.León	0.019	0.015	0.032	0.049	0.068	0.087
Cataluña	0.009	0.008	0.016	0.024	0.032	0.040
Ceuta	0.016	0.014	0.029	0.046	0.064	0.082
Comunidad.Valenciana	0.014	0.013	0.026	0.040	0.054	0.069
Extremadura	0.010	0.009	0.018	0.028	0.038	0.049
Galicia	0.014	0.012	0.025	0.039	0.053	0.068
Madrid	0.003	0.004	0.007	0.010	0.012	0.015
Melilla	0.002	0.006	0.011	0.014	0.017	0.019
Murcia	0.021	0.019	0.040	0.064	0.090	0.116
Navarra	0.030	0.021	0.046	0.073	0.103	0.136
País.Vasco	0.016	0.013	0.026	0.041	0.057	0.074
La.Rioja	0.004	0.005	0.009	0.013	0.017	0.022

Cuadro: Previsión Ratio Incr. Confirmados: Mod. lineal - Horizonte 1 – 5 días.

Tabla Ratio Incr. Confirmados: Mod. No Paramétrico.

	Last	H1	H2	H3	H4	H5
España	0.011	0.005	0.011	0.016	0.021	0.027
Andalucía	0.013	0.007	0.013	0.020	0.027	0.033
Aragón	0.013	0.008	0.017	0.025	0.034	0.042
Asturias	0.010	0.007	0.014	0.020	0.027	0.034
Islas.Baleares	0.005	0.003	0.005	0.008	0.011	0.014
Canarias	0.003	0.002	0.004	0.006	0.009	0.011
Cantabria	0.007	0.005	0.011	0.016	0.021	0.026
Castilla.La.Mancha	0.017	0.010	0.019	0.029	0.039	0.048
Castilla.y.León	0.019	0.011	0.021	0.032	0.043	0.053
Cataluña	0.009	0.004	0.008	0.013	0.017	0.021
Ceuta	0.016	0.013	0.025	0.038	0.051	0.063
Comunidad.Valenciana	0.014	0.008	0.016	0.025	0.033	0.041
Extremadura	0.010	0.004	0.008	0.012	0.016	0.020
Galicia	0.014	0.005	0.011	0.016	0.022	0.027
Madrid	0.003	0.003	0.005	0.008	0.011	0.013
Melilla	0.002	0.004	0.008	0.012	0.016	0.019
Murcia	0.021	0.012	0.024	0.036	0.049	0.062
Navarra	0.030	0.016	0.032	0.048	0.064	0.081
País.Vasco	0.016	0.009	0.018	0.027	0.036	0.044
La.Rioja	0.004	0.003	0.006	0.009	0.012	0.015

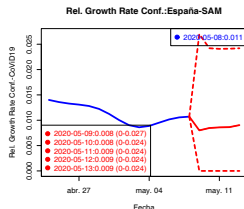
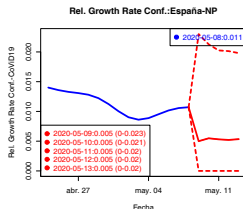
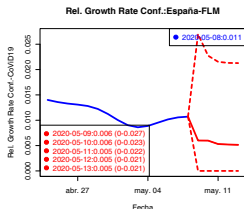
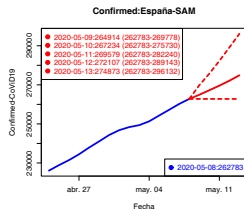
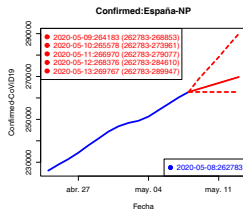
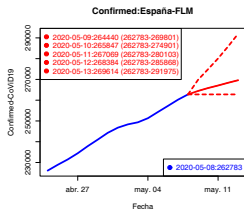
Cuadro: Previsión Ratio Incr. Confirmados: Mod. No Paramétrico - Horizonte 1
– 5 días.

Tabla Ratio Incr. Confirmados: Mod. Aditivo.

	Last	H1	H2	H3	H4	H5
España	0.011	0.008	0.017	0.026	0.035	0.046
Andalucía	0.013	0.010	0.019	0.028	0.040	0.051
Aragón	0.013	0.008	0.018	0.028	0.039	0.053
Asturias	0.010	0.007	0.014	0.022	0.030	0.039
Islas.Baleares	0.005	0.004	0.008	0.012	0.017	0.021
Canarias	0.003	0.002	0.004	0.006	0.008	0.010
Cantabria	0.007	0.003	0.006	0.008	0.011	0.015
Castilla.La.Mancha	0.017	0.014	0.028	0.042	0.057	0.073
Castilla.y.León	0.019	0.015	0.031	0.048	0.067	0.087
Cataluña	0.009	0.007	0.015	0.022	0.029	0.037
Ceuta	0.016	0.012	0.031	0.052	0.071	0.097
Comunidad.Valenciana	0.014	0.011	0.022	0.033	0.045	0.057
Extremadura	0.010	0.007	0.013	0.020	0.029	0.037
Galicia	0.014	0.011	0.025	0.040	0.054	0.071
Madrid	0.003	0.002	0.006	0.009	0.012	0.016
Melilla	0.002	0.005	0.008	0.009	0.008	0.007
Murcia	0.021	0.017	0.044	0.074	0.098	0.132
Navarra	0.030	0.022	0.051	0.084	0.115	0.157
País.Vasco	0.016	0.011	0.024	0.038	0.052	0.070
La.Rioja	0.004	0.003	0.006	0.009	0.012	0.016

Cuadro: Previsión Ratio Incr. Confirmados: Mod. Aditivo - Horizonte 1 – 5 días.

Confirmados: España



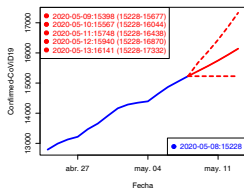
Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

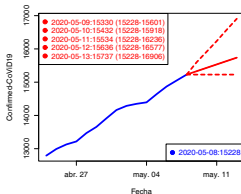
◀ Fallecidos

Confirmados: Andalucía

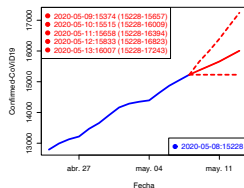
Confirmed:Andalucía-FLM



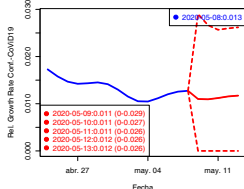
Confirmed:Andalucía-NP



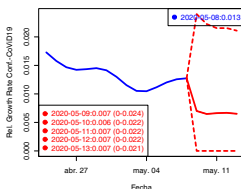
Confirmed:Andalucía-SAM



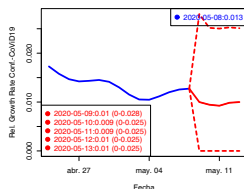
Rel. Growth Rate Conf.:Andalucia-FLM



Rel. Growth Rate Conf.:Andalucia-NP



Rel. Growth Rate Conf.:Andalucía-SAM

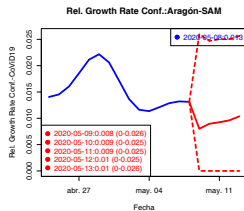
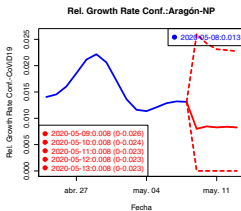
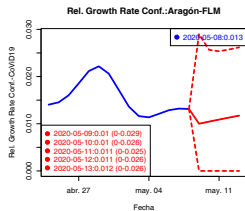
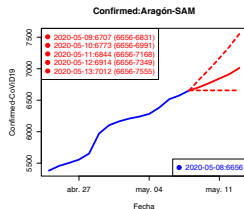
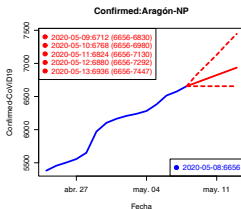
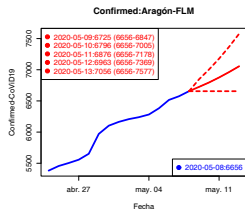


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

← Confirmados

← Fallecidos

Confirmados: Aragón

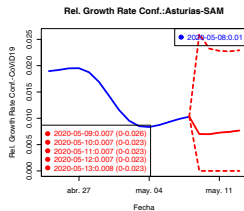
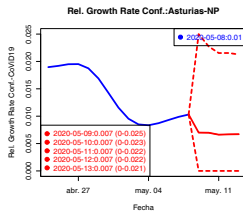
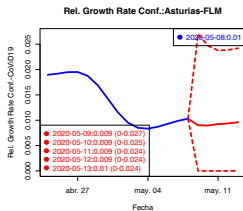
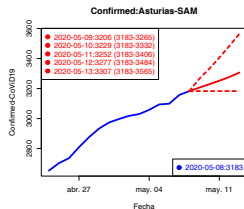
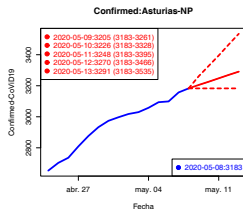
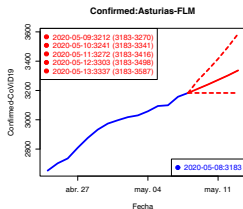


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Confirmados: Asturias

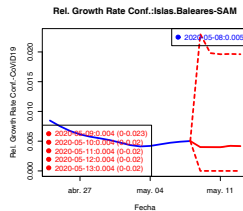
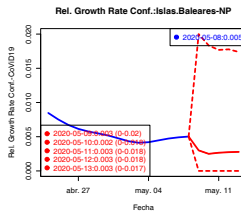
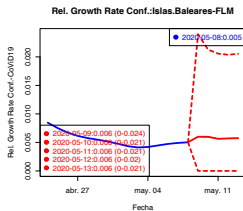
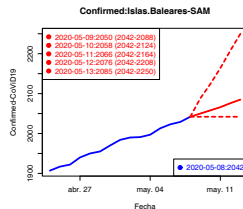
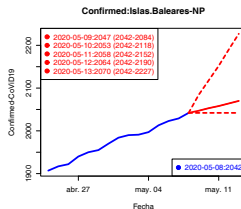
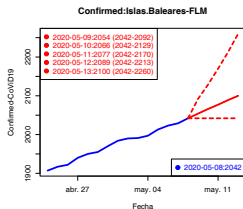


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Confirmados: Islas Baleares

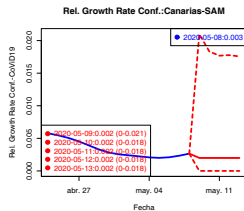
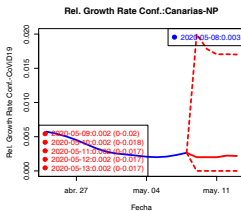
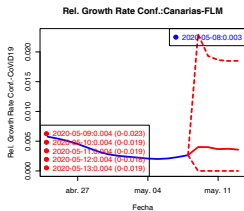
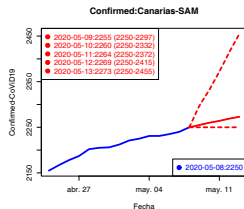
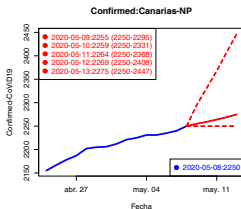
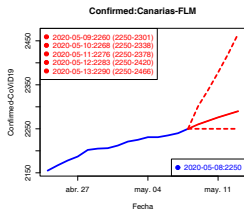


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Confirmados: Canarias

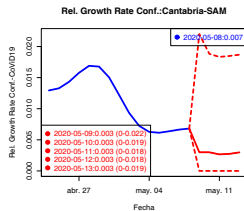
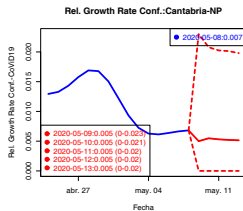
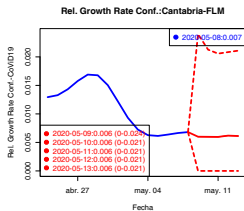
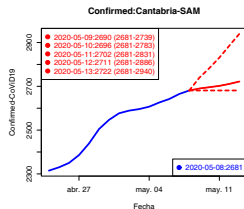
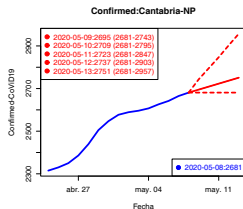
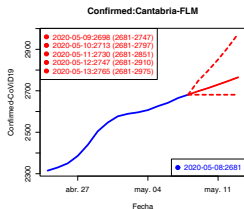


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Confirmados: Cantabria



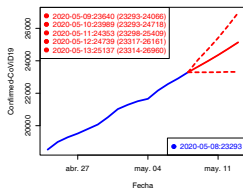
Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

← Confirmados

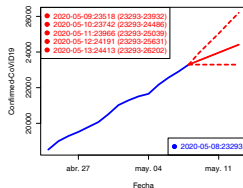
← Fallecidos

Confirmados: Castilla-La Mancha

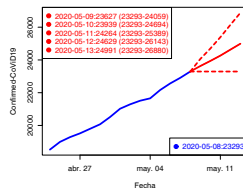
Confirmed:Castilla.La.Mancha-FLM



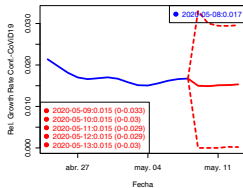
Confirmed:Castilla.La.Mancha-NP



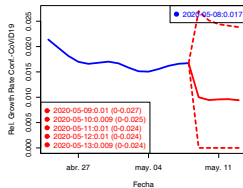
Confirmed:Castilla.La.Mancha-SAM



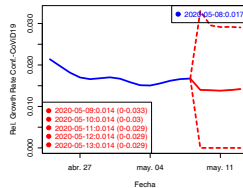
Rel. Growth Rate Conf.:Castilla.La.Mancha-FLM



Rel. Growth Rate Conf.:Castilla.La.Mancha-NP



Rel. Growth Rate Conf.:Castilla.La.Mancha-SAM



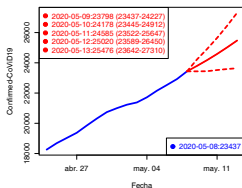
Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

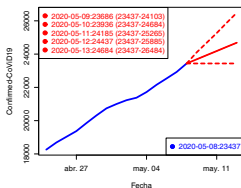
◀ Fallecidos

Confirmados: Castilla y León

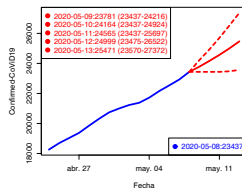
Confirmed:Castilla.y.León-FLM



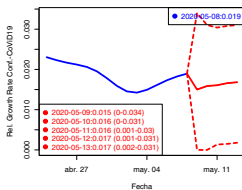
Confirmed:Castilla.y.León-NP



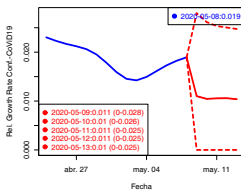
Confirmed:Castilla.y.León-SAM



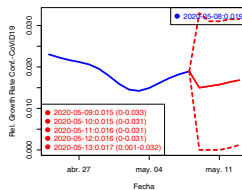
Rel. Growth Rate Conf.:Castilla.y.León-FLM



Rel. Growth Rate Conf.:Castilla.y.León-NP



Rel. Growth Rate Conf.:Castilla.y.León-SAM

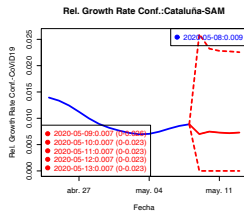
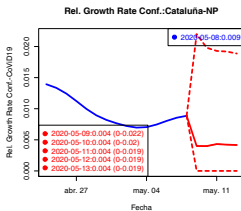
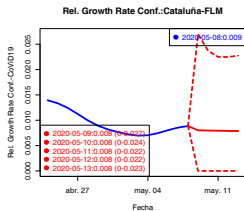
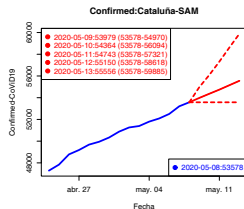
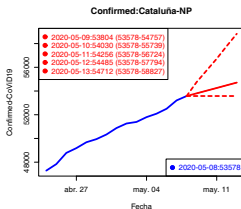
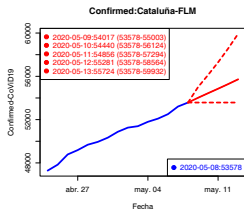


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

← Confirmados

← Fallecidos

Confirmados: Cataluña



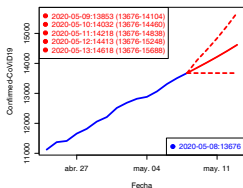
Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

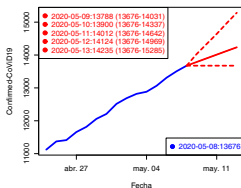
◀ Fallecidos

Confirmados: C. Valenciana

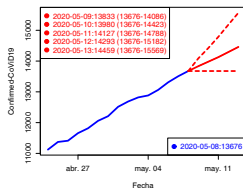
Confirmed:Comunidad.Valenciana-FLM



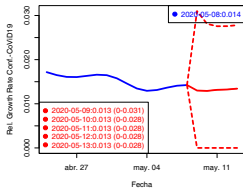
Confirmed:Comunidad.Valenciana-NP



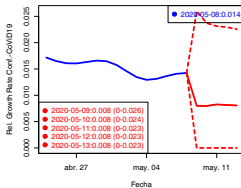
Confirmed:Comunidad.Valenciana-SAM



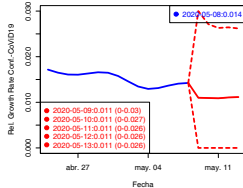
Rel. Growth Rate Conf.:Comunidad.Valenciana-FLM



Rel. Growth Rate Conf.:Comunidad.Valenciana-NP



Rel. Growth Rate Conf.:Comunidad.Valenciana-SAM

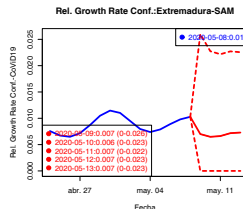
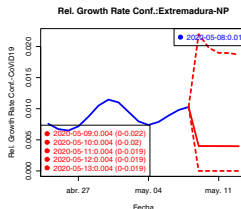
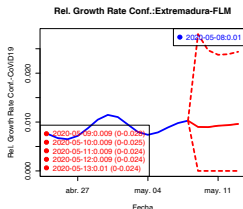
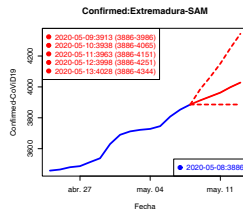
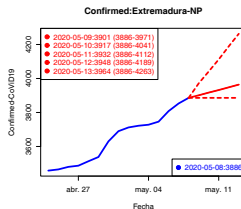
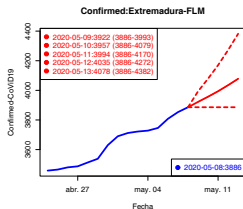


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Confirmados: Extremadura



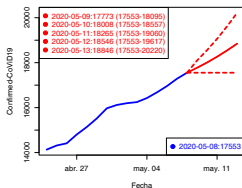
Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

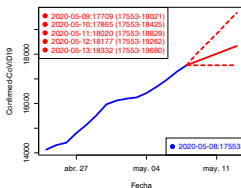
◀ Fallecidos

Confirmados: País Vasco

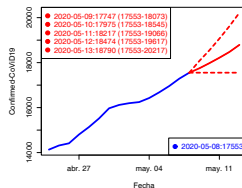
Confirmed:País.Vasco-FLM



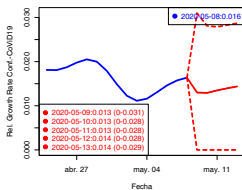
Confirmed:País.Vasco-NP



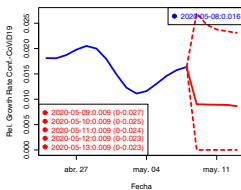
Confirmed:País.Vasco-SAM



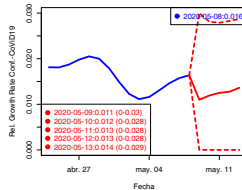
Rel. Growth Rate Conf.:País.Vasco-FLM



Rel. Growth Rate Conf.:País.Vasco-NP



Rel. Growth Rate Conf.:País.Vasco-SAM

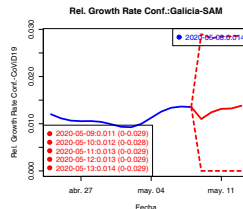
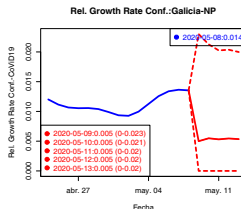
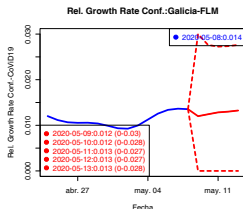
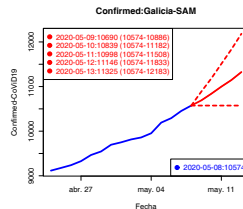
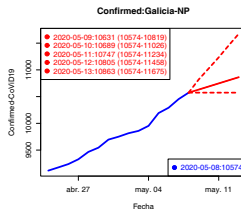
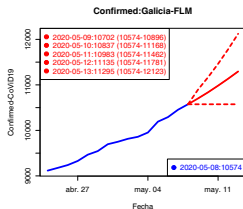


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

← Confirmados

← Fallecidos

Confirmados: Galicia

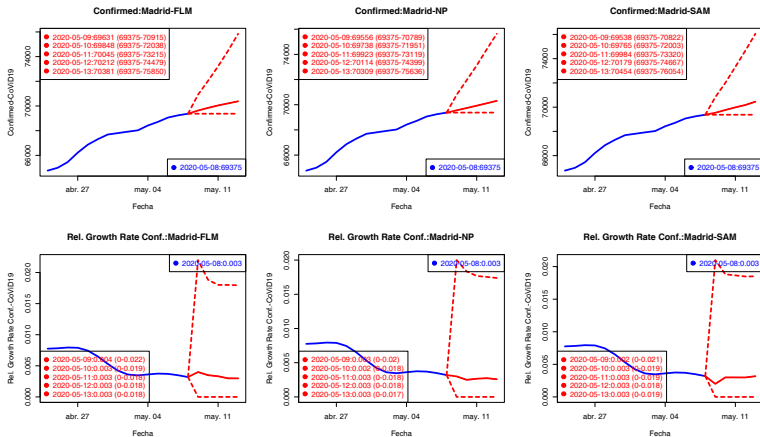


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Confirmados: Madrid

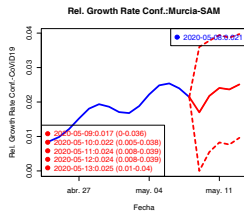
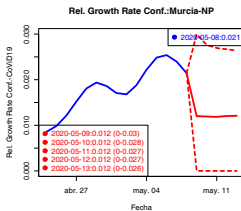
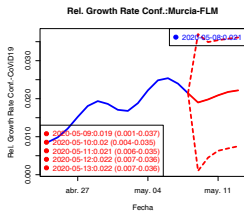
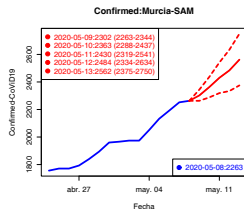
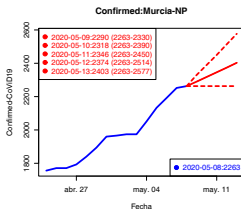
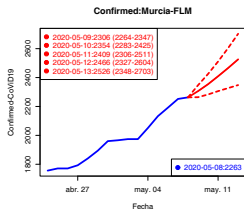


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Confirmados: Murcia

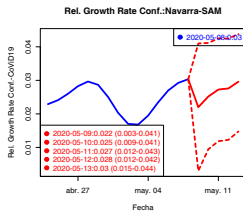
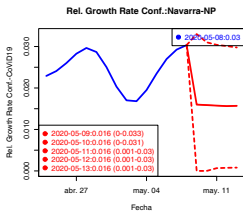
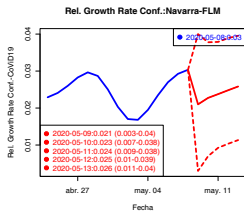
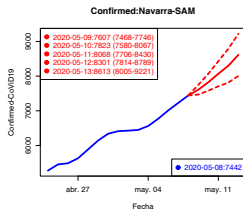
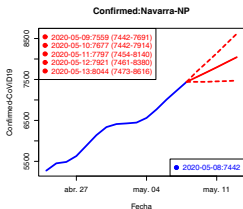
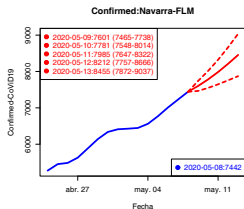


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Confirmados: Navarra



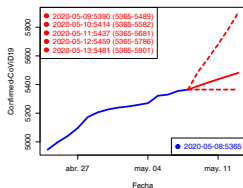
Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

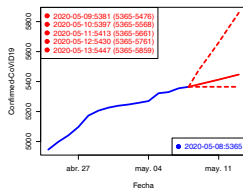
◀ Fallecidos

Confirmados: La Rioja

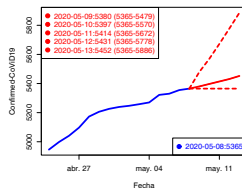
Confirmed:La.Rioja-FLM



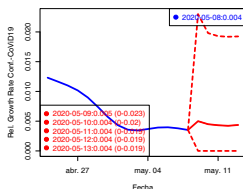
Confirmed:La.Rioja-NP



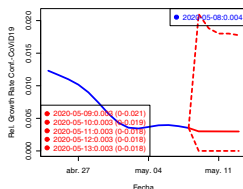
Confirmed:La.Rioja-SAM



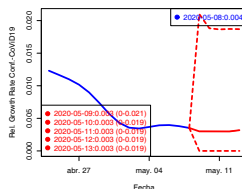
Rel. Growth Rate Conf.:La.Rioja-FLM



Rel. Growth Rate Conf.:La.Rioja-NP



Rel. Growth Rate Conf.:La.Rioja-SAM



Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Table of Contents

- 1 Casos Confirmados
 - Predicciones
- 2 Fallecidos
 - Predicciones Fallecidos
- 3 Panorama internacional

Modelos para fallecidos por CoViD-19

Número de datos funcionales: 8454

Países/Regiones distintos incorporados: 106

Predicciones:

▶ España

▶ Andalucía

▶ Aragón

▶ Asturias

▶ I. Baleares

▶ Canarias

▶ Cantabria

▶ Castilla-La Mancha

▶ Castilla y León

▶ Cataluña

▶ C. Valenciana

▶ Extremadura

▶ País Vasco

▶ Galicia

▶ Madrid

▶ Murcia

▶ Navarra

▶ La Rioja

▶ Mod Lineal

▶ Mod NP

▶ Mod Aditivo

	σ_R^2			$\sigma_R^2(rob.)$			r^2		
Horiz	FLM	NP	SAM	FLM	NP	SAM	FLM	NP	SAM
H1	0.001	0.001	0.001	0.001	0.001	0.001	0.506	0.497	0.537
H2	0.002	0.002	0.002	0.002	0.002	0.002	0.617	0.604	0.668
H3	0.004	0.004	0.003	0.005	0.005	0.004	0.674	0.656	0.729
H4	0.006	0.007	0.005	0.009	0.009	0.006	0.711	0.688	0.768
H5	0.01	0.011	0.008	0.015	0.013	0.011	0.727	0.701	0.785

Tabla Previsión Fallecidos: Mod. Lineal.

	Last	H1	H2	H3	H4	H5
España	26478	26713	26929	27126	27303	27479
Andalucía	1317	1329	1339	1349	1358	1367
Aragón	823	833	842	851	860	869
Asturias	293	296	298	300	302	304
Islas.Baleares	207	209	210	212	213	215
Canarias	148	149	151	152	153	154
Cantabria	201	202	204	205	205	206
Castilla.La.Mancha	2738	2768	2798	2825	2851	2878
Castilla.y.León	1885	1902	1918	1932	1945	1958
Cataluña	5507	5566	5622	5673	5720	5766
Ceuta	4	4	4	4	4	4
Comunidad.Valenciana	1315	1326	1335	1344	1351	1359
Extremadura	477	481	484	487	490	492
Galicia	591	594	598	602	607	612
Madrid	8598	8659	8712	8755	8789	8822
Melilla	2	2	2	2	2	2
Murcia	138	139	140	141	142	143
Navarra	487	491	496	500	505	510
País.Vasco	1403	1416	1428	1440	1451	1462
La.Rioja	344	346	348	349	350	351

Cuadro: Previsión fallecidos: Mod. lineal - Horizonte 1 – 5 días.

Tabla Previsión Fallecidos: Mod. No Paramétrico.

	Last	H1	H2	H3	H4	H5
España	26478	26863	27235	27598	27946	28289
Andalucía	1317	1336	1355	1373	1391	1408
Aragón	823	835	846	858	869	879
Asturias	293	298	302	306	311	315
Islas Baleares	207	210	213	216	219	222
Canarias	148	150	152	154	156	158
Cantabria	201	204	207	209	212	214
Castilla La Mancha	2738	2779	2818	2857	2894	2931
Castilla y León	1885	1912	1939	1964	1989	2013
Cataluña	5507	5592	5675	5755	5832	5909
Ceuta	4	4	4	4	4	4
Comunidad Valenciana	1315	1334	1352	1369	1386	1403
Extremadura	477	484	490	497	503	509
Galicia	591	604	617	629	641	653
Madrid	8598	8717	8832	8944	9051	9157
Melilla	2	2	2	2	2	2
Murcia	138	140	142	144	145	147
Navarra	487	494	501	507	514	520
País Vasco	1403	1423	1443	1462	1481	1499
La Rioja	344	349	353	358	362	367

Cuadro: Previsión fallecidos: Mod. No Paramétrico - Horizonte 1 – 5 días.

Tabla Previsión Fallecidos: Mod. Aditivo.

	Last	H1	H2	H3	H4	H5
España	26478	26705	26986	27234	27491	27757
Andalucía	1317	1329	1343	1355	1368	1382
Aragón	823	833	844	856	870	881
Asturias	293	296	298	300	301	302
Islas Baleares	207	209	211	212	214	216
Canarias	148	149	151	153	155	156
Cantabria	201	202	204	206	207	209
Castilla-La Mancha	2738	2767	2800	2833	2870	2904
Castilla y León	1885	1902	1923	1945	1964	1987
Cataluña	5507	5560	5615	5654	5700	5746
Ceuta	4	4	4	4	4	4
Comunidad Valenciana	1315	1325	1340	1354	1368	1384
Extremadura	477	481	486	490	495	500
Galicia	591	593	594	595	602	604
Madrid	8598	8651	8736	8821	8896	8976
Melilla	2	2	2	2	2	2
Murcia	138	139	141	143	146	148
Navarra	487	493	500	508	516	525
País Vasco	1403	1417	1433	1450	1466	1483
La Rioja	344	346	350	351	354	356

Cuadro: Previsión fallecidos: Mod. Aditivo - Horizonte 1 – 5 días.

Tabla Ratio Incr. Fallecidos: Mod. Lineal.

	Last	H1	H2	H3	H4	H5
España	0.008	0.009	0.017	0.024	0.031	0.038
Andalucía	0.009	0.009	0.017	0.025	0.031	0.038
Aragón	0.015	0.012	0.023	0.034	0.045	0.056
Asturias	0.006	0.009	0.018	0.025	0.031	0.036
Islas.Baleares	0.012	0.009	0.016	0.024	0.031	0.038
Canarias	0.011	0.010	0.019	0.027	0.035	0.043
Cantabria	0.003	0.007	0.013	0.018	0.021	0.024
Castilla.La.Mancha	0.011	0.011	0.022	0.032	0.041	0.051
Castilla.y.León	0.007	0.009	0.017	0.025	0.032	0.039
Cataluña	0.010	0.011	0.021	0.030	0.039	0.047
Ceuta	0.000	0.003	0.006	0.007	0.008	0.009
Comunidad.Valenciana	0.006	0.008	0.016	0.022	0.028	0.033
Extremadura	0.009	0.008	0.015	0.021	0.026	0.031
Galicia	0.006	0.006	0.011	0.018	0.026	0.035
Madrid	0.005	0.007	0.013	0.018	0.022	0.026
Melilla	0.000	0.003	0.005	0.005	0.004	0.003
Murcia	0.005	0.007	0.015	0.022	0.028	0.034
Navarra	0.008	0.009	0.018	0.028	0.037	0.046
País.Vasco	0.009	0.009	0.018	0.026	0.034	0.042
La.Rioja	0.006	0.006	0.011	0.016	0.019	0.022

Cuadro: Previsión Ratio Incr. Fallecidos: Mod. lineal - Horizonte 1 – 5 días.

Tabla Ratio Incr. Fallecidos: Mod. No Paramétrico.

	Last	H1	H2	H3	H4	H5
España	0.008	0.015	0.029	0.042	0.055	0.068
Andalucía	0.009	0.015	0.029	0.043	0.056	0.069
Aragón	0.015	0.014	0.028	0.042	0.055	0.068
Asturias	0.006	0.016	0.031	0.046	0.060	0.074
Islas.Baleares	0.012	0.015	0.029	0.043	0.057	0.070
Canarias	0.011	0.014	0.028	0.041	0.054	0.067
Cantabria	0.003	0.014	0.028	0.041	0.054	0.066
Castilla.La.Mancha	0.011	0.015	0.029	0.043	0.057	0.070
Castilla.y.León	0.007	0.014	0.028	0.042	0.055	0.068
Cataluña	0.010	0.015	0.030	0.045	0.059	0.073
Ceuta	0.000	0.013	0.025	0.038	0.049	0.061
Comunidad.Valenciana	0.006	0.014	0.028	0.041	0.054	0.067
Extremadura	0.009	0.014	0.028	0.042	0.055	0.068
Galicia	0.006	0.022	0.043	0.064	0.084	0.104
Madrid	0.005	0.014	0.027	0.040	0.053	0.065
Melilla	0.000	0.013	0.025	0.038	0.049	0.061
Murcia	0.005	0.014	0.027	0.040	0.053	0.065
Navarra	0.008	0.014	0.028	0.042	0.055	0.068
País.Vasco	0.009	0.015	0.029	0.042	0.055	0.068
La.Rioja	0.006	0.014	0.027	0.041	0.053	0.066

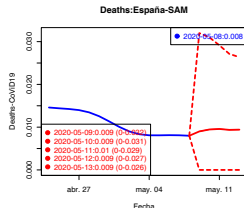
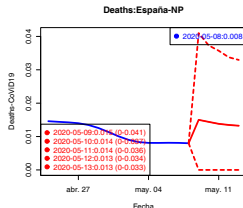
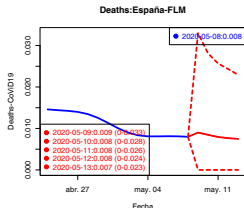
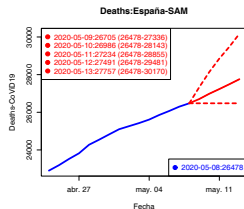
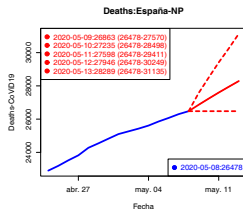
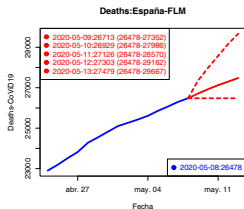
Cuadro: Previsión Ratio Incr. Fallecidos: Mod. No Paramétrico - Horizonte 1 – 5 días.

Tabla Ratio Incr. Fallecidos: Mod. Aditivo.

	Last	H1	H2	H3	H4	H5
España	0.008	0.009	0.019	0.029	0.038	0.048
Andalucía	0.009	0.009	0.020	0.029	0.039	0.049
Aragón	0.015	0.012	0.025	0.039	0.058	0.070
Asturias	0.006	0.010	0.018	0.022	0.029	0.032
Islas.Baleares	0.012	0.009	0.019	0.025	0.036	0.043
Canarias	0.011	0.009	0.021	0.032	0.045	0.055
Cantabria	0.003	0.006	0.014	0.025	0.032	0.040
Castilla.La.Mancha	0.011	0.011	0.023	0.035	0.048	0.061
Castilla.y.León	0.007	0.009	0.020	0.032	0.042	0.054
Cataluña	0.010	0.010	0.020	0.027	0.035	0.043
Ceuta	0.000	0.006	0.018	0.032	0.045	0.059
Comunidad.Valenciana	0.006	0.008	0.019	0.030	0.041	0.052
Extremadura	0.009	0.008	0.019	0.027	0.038	0.048
Galicia	0.006	0.003	0.005	0.007	0.018	0.022
Madrid	0.005	0.006	0.016	0.026	0.035	0.044
Melilla	0.000	0.003	0.012	0.021	0.030	0.041
Murcia	0.005	0.009	0.023	0.039	0.054	0.071
Navarra	0.008	0.012	0.027	0.043	0.060	0.077
País.Vasco	0.009	0.010	0.021	0.033	0.045	0.057
La.Rioja	0.006	0.007	0.016	0.020	0.029	0.035

Cuadro: Previsión Ratio Incr. Fallecidos: Mod. Aditivo - Horizonte 1 – 5 días.

Fallecidos: España

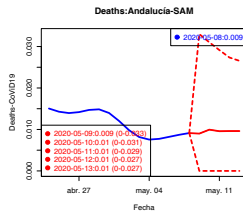
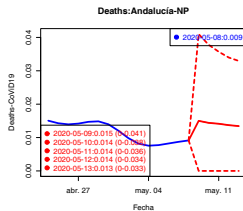
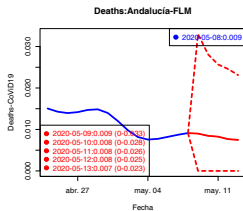
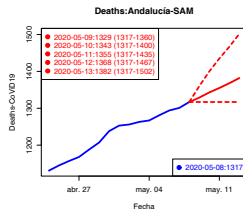
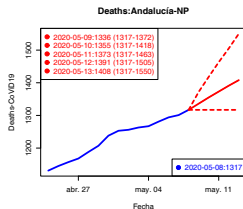
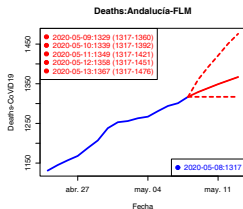


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

[◀ Fallecidos](#)

Fallecidos: Andalucía

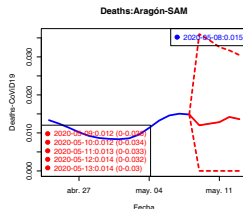
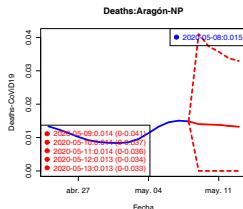
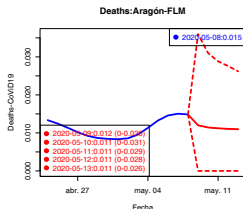
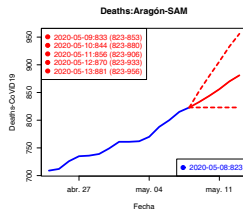
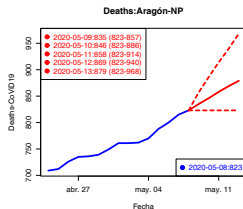
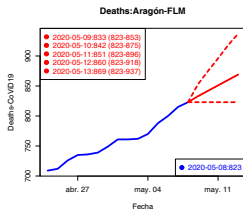


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

[◀ Fallecidos](#)

Fallecidos: Aragón

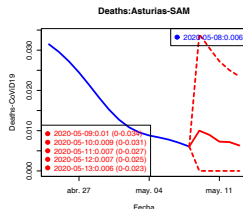
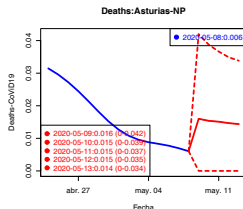
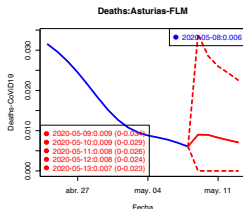
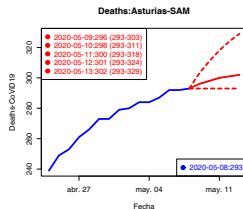
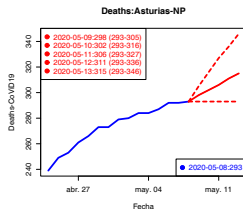
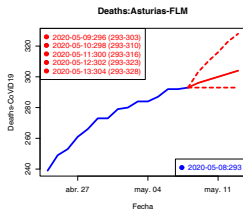


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

[◀ Fallecidos](#)

Fallecidos: Asturias

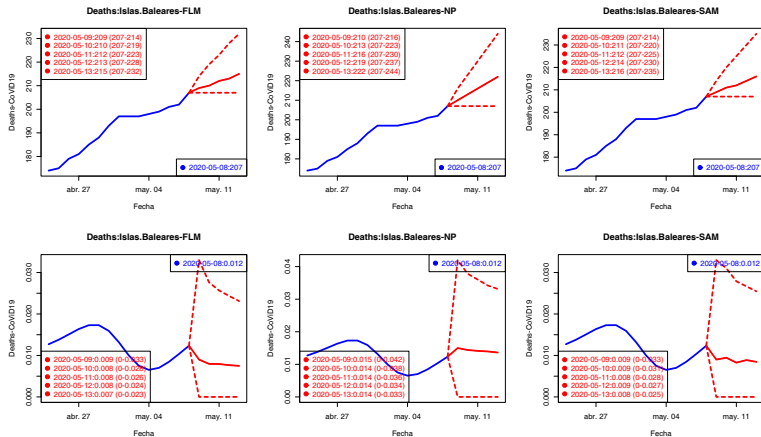


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

[◀ Fallecidos](#)

Fallecidos: Islas Baleares

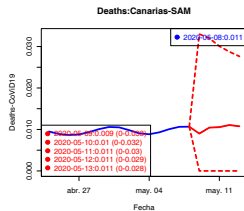
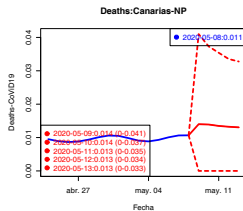
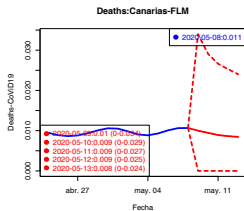
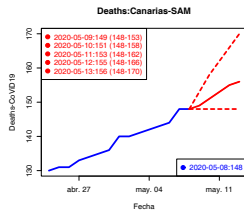
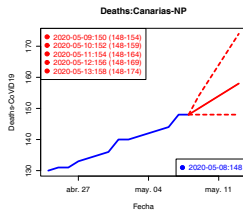
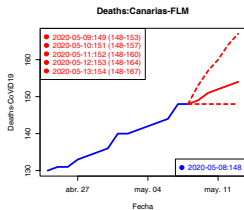


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Fallecidos: Canarias

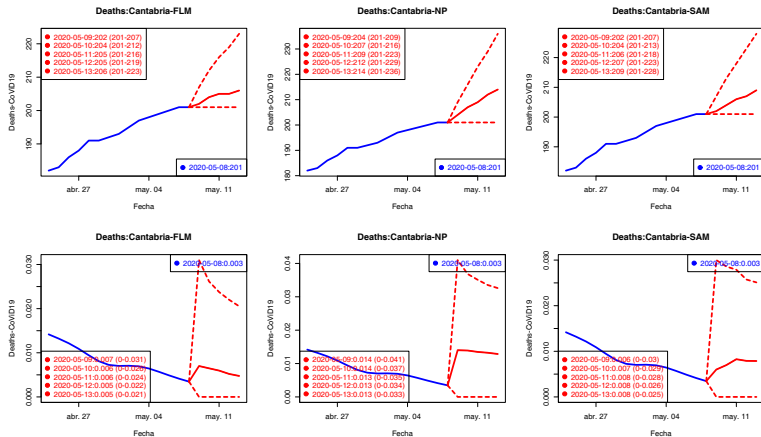


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

[◀ Fallecidos](#)

Fallecidos: Cantabria

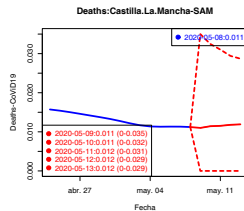
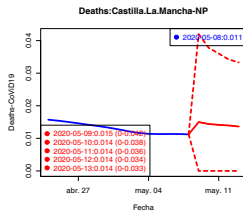
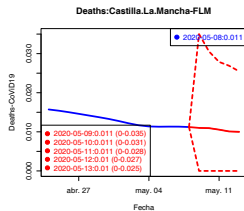
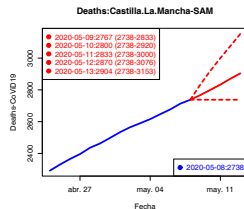
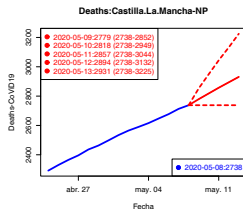
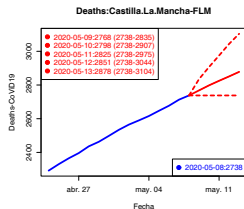


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Fallecidos: Castilla-La Mancha

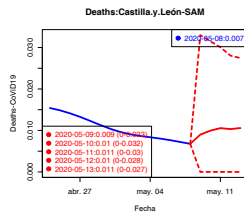
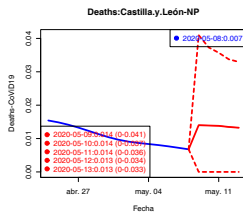
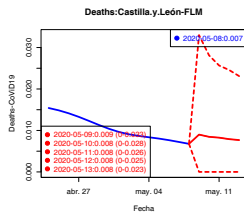
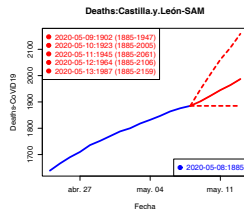
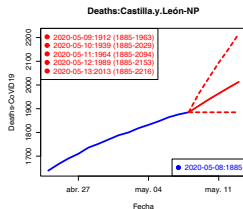
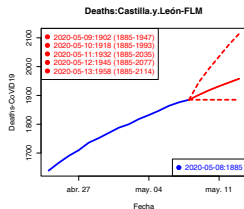


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

[◀ Fallecidos](#)

Fallecidos: Castilla y León

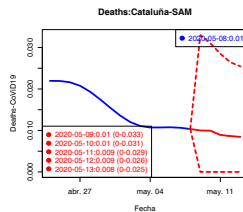
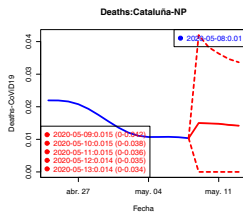
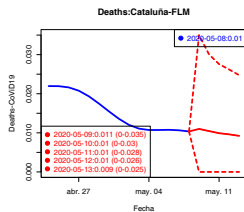
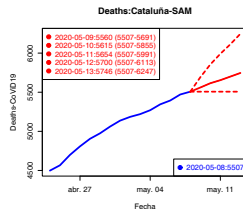
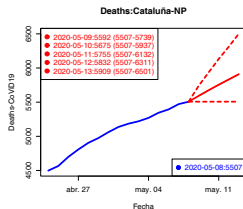
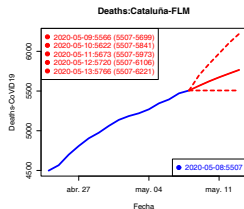


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Fallecidos: Cataluña

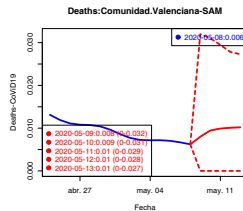
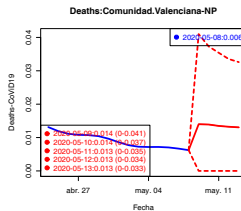
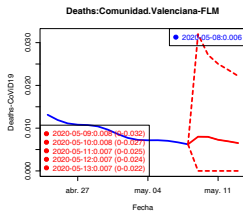
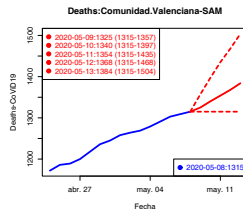
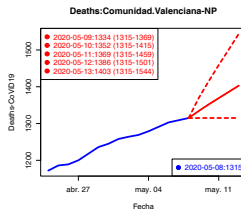
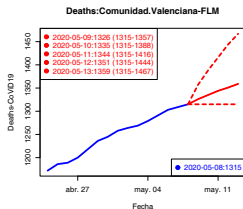


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Fallecidos: C. Valenciana

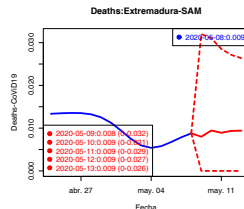
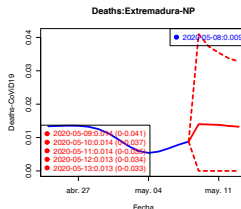
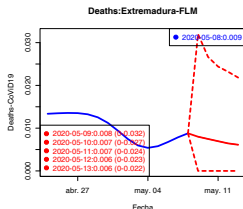
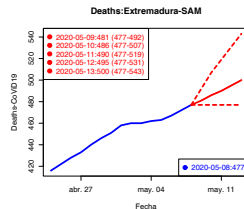
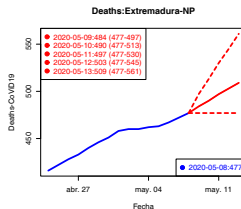
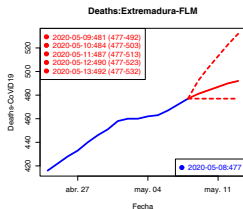


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

[◀ Fallecidos](#)

Fallecidos: Extremadura

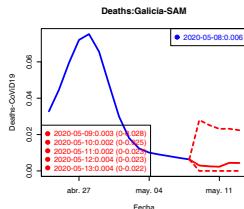
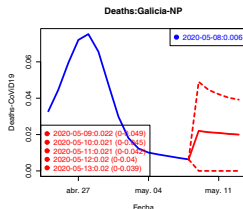
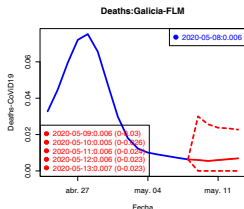
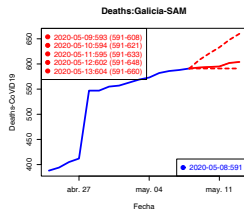
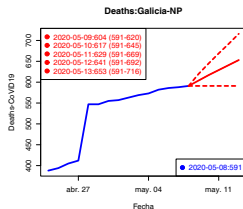
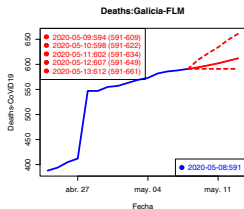


Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Fallecidos: Galicia

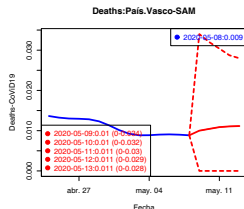
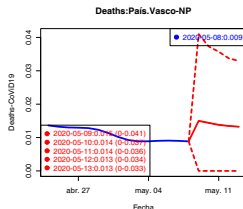
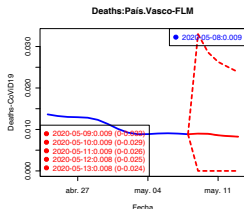
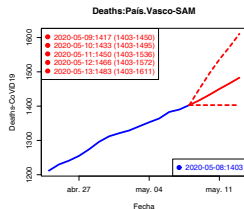
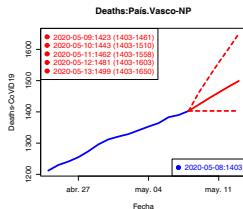
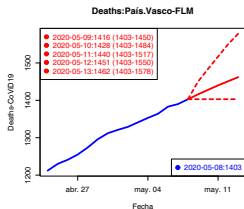


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

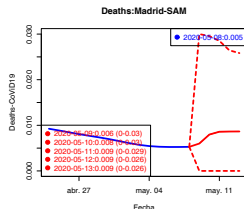
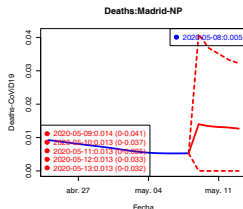
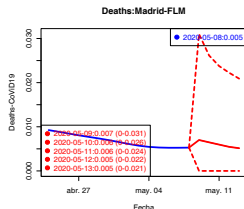
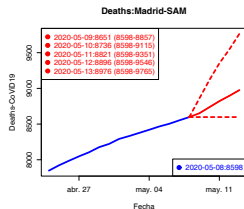
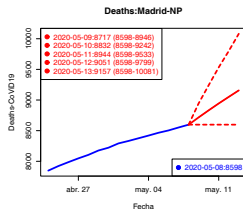
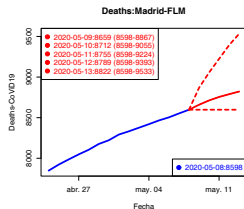
[◀ Fallecidos](#)

Fallecidos: País Vasco



Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

Fallecidos: Madrid

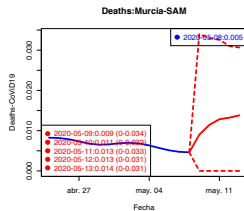
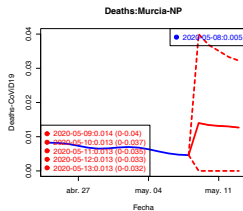
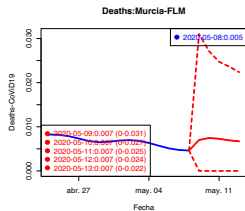
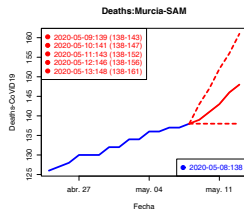
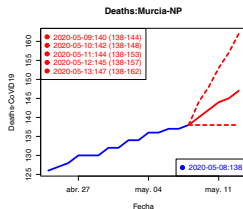
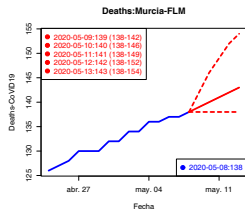


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

◀ Fallecidos

Fallecidos: Murcia

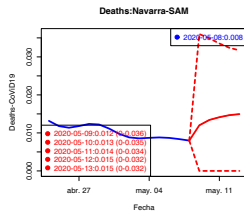
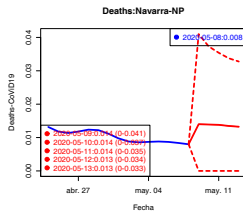
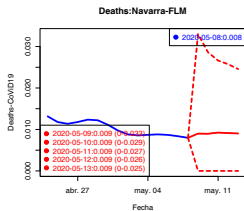
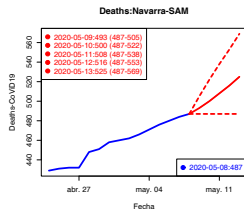
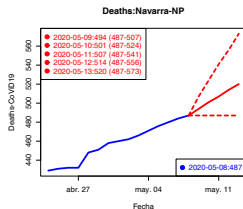
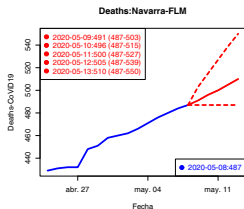


Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

◀ Confirmados

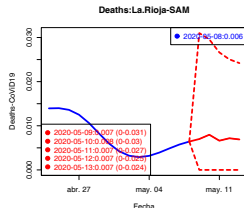
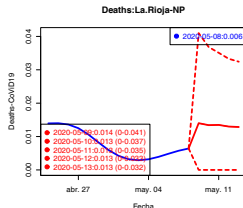
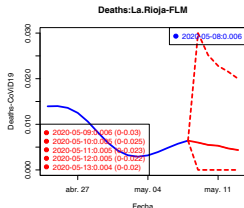
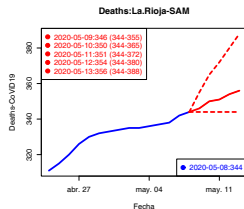
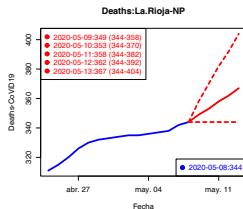
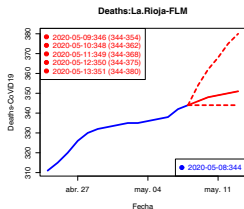
◀ Fallecidos

Fallecidos: Navarra



Los valores del Ratio de incremento de H2-H5 están rescalados a H1 para su comparación gráfica.

Fallecidos: La Rioja



Los valores del Ratio de incremento de H2–H5 están rescalados a H1 para su comparación gráfica.

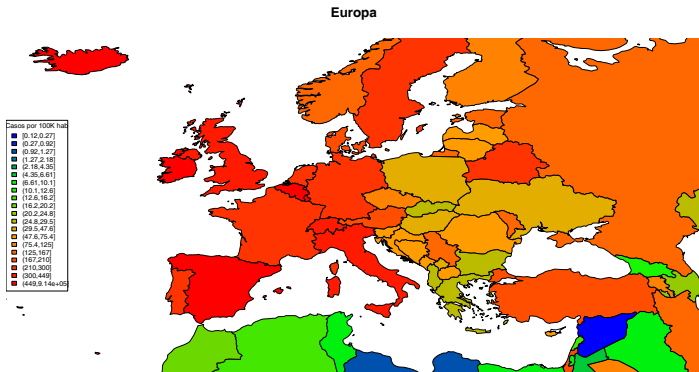
◀ Confirmados

[◀ Fallecidos](#)

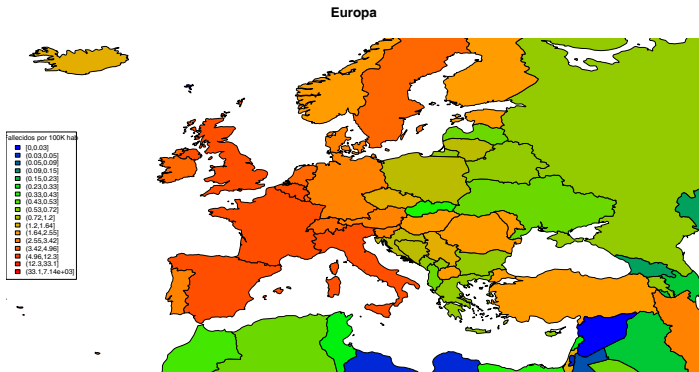
Table of Contents

- 1 Casos Confirmados
 - Predicciones
- 2 Fallecidos
 - Predicciones Fallecidos
- 3 Panorama internacional

Europa: Confirmados por 100K hab.

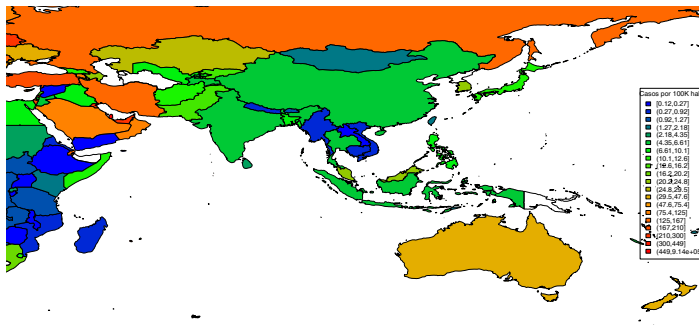


Europa: Fallecidos por 100K hab.



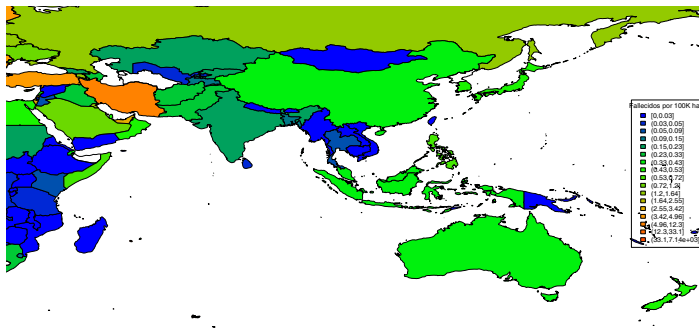
Asia y Oceanía: Casos por 100K hab.

Asia y Oceanía



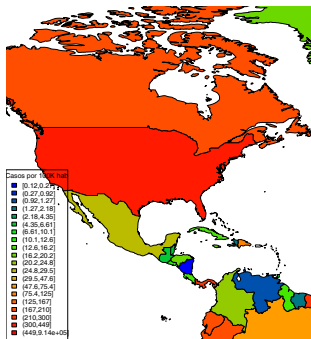
Asia y Oceanía: Fallecidos por 100K hab.

Asia y Oceanía

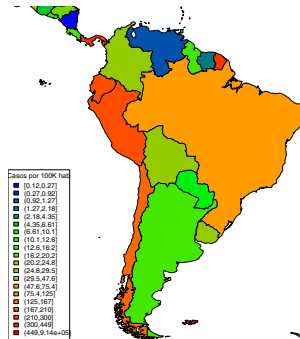


América: Casos por 100K hab.

América del Norte

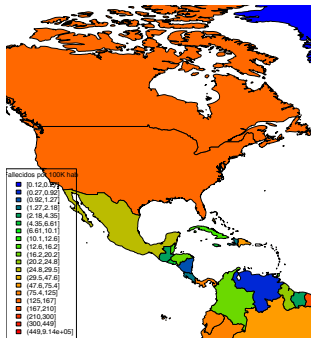


América del sur

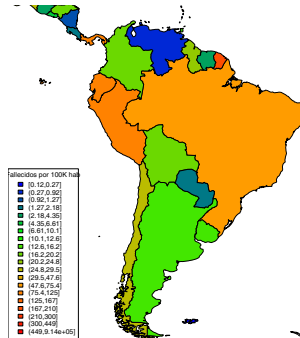


América: Fallecidos por 100K hab.

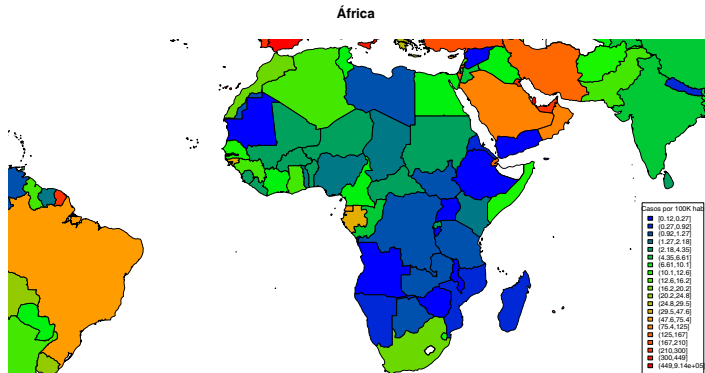
América del Norte



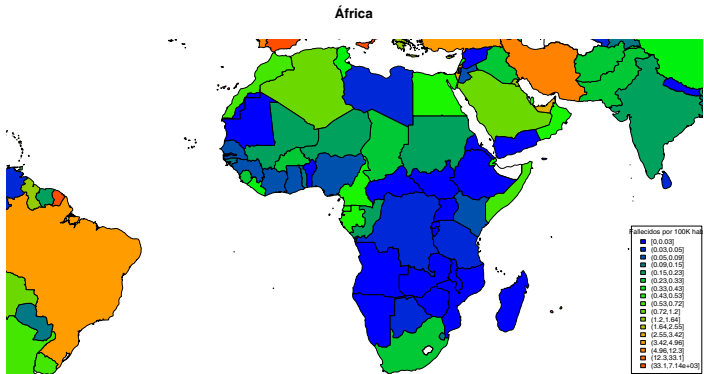
América del sur



África: Casos por 100K hab.



África: Fallecidos por 100K hab.



Breve descripción del Modelo de predicción

Objetivo: Predecir ratio de incremento de casos confirmados a 1, 2, o 3 días: $r^{(k)}(t) = \frac{x_{t+k} - x_t}{x_t + 1}$

Información usada: Pasado de esta variable suavizado (retardo 1) durante los últimos 15 días: $R^{(1)} = \{r^{(1)}(-14), \dots, r^{(1)}(0)\}$.

Datos para alimentar el modelo: https://github.com/CSSEGISandData/COVID-19/tree/master/csse_covid_19_data/csse_covid_19_time_series/. Algunas series de tiempo (como el Diamond Princess) son filtrados por inconsistencia, presunta falta de veracidad o por anormalmente valores bajos. En la predicción final se reconstruye el número de casos esperado. Se construyen tres modelos funcionales de la regresión general: $r^{(k)}(0) = f(R^{(1)}) + \epsilon$ donde la diferencia radica en la forma de la función f

- Lineal: $f(R^{(1)}) = \int_{-14}^0 R^{(1)}(t)\beta(t)dt$
- NP: f es una estimación no paramétrica tipo núcleo.
- SAM: f es una combinación aditiva de funciones suaves de las componentes principales funcionales.

Para el objetivo de predecir el ratio de incremento de fallecidos, se usa además del pasado de la propia variable, el ratio de incremento pasado de casos confirmados.