

ANEXO DEL TRABAJO FIN DE MÁSTER

MODELIZACIÓN DE LA RESPUESTA CLIMÁTICA DE *FAGUS SYLVATICA* EN EL PARQUE NATURAL DEL MONCAYO

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**Tecnologías de la información geográfica para la ordenación del
territorio: sistemas de información geográfica y teledetección**

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Universidad
Zaragoza

**Departamento de Geografía
y Ordenación del Territorio**



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1. Coeficientes de correlación

Cod_Dendro	Id	Loc_muestr	Fecha	N_trees	Especie	Años_corr	Altitud	Orientacion	Orientacion(	Pendiente
MY01_FASY	7	Hayedo Fuer	26/05/2010	12	Fagus sylvati	1940-2006	1225,45	30,9638	0,8995	32,0702
MY02_FASY	19	Penarroya	23/11/2010	7	Fagus sylvati	1940-2006	1360,00	348,9960	-0,9613	36,6742
MY03_FASY	8	Pena Nariz	26/05/2010	13	Fagus sylvati	1940-2006	1550,00	338,1990	0,4598	48,4665
MY04_FASY	29	Canchal Barr	21/06/2011	10	Fagus sylvati	1940-2006	1450,00	57,9946	0,1245	37,7359
MY05_FASY	32	Valdemanza	21/06/2011	15	Fagus sylvati	1940-2006	1550,00	1,0416	0,5048	55,0091
MY06_FASY	15	Hoyo el Cere	17/11/2010	5	Fagus sylvati	1940-2006	1170,00	65,2976	-0,7802	55,0364
MY10_FASY	25	Haya Seca	20/06/2011	10	Fagus sylvati	1940-2006	1606,00	75,0686	0,9462	46,5725
MY11_FASY	26	Fuente la Te	20/06/2011	10	Fagus sylvati	1940-2006	1220,00	38,9910	0,2753	27,0185
MY14_FASY	33	Collado la Lo	21/06/2011	5	Fagus sylvati	1940-2006	1442,00	185,8700	-0,8698	53,7820
MY16_FASY	37	Arroyo de Ca	22/06/2011	10	Fagus sylvati	1940-2006	1150,00	67,4259	-0,1181	48,1923
MY17_FASY	38	Arroyo de lo	22/06/2011	10	Fagus sylvati	1940-2006	1520,00	346,5350	0,5737	36,5034
MY26_FASY	56	Barranco Cas	17/11/2011	6	Fagus sylvati	1940-2006	1380,00	1,9092	-0,3319	30,0167
MY27_FASY	57	Sendero Bari	17/11/2011	6	Fagus sylvati	1940-2006	1319,00	354,9580	-0,9991	34,1321
MY28_FASY	58	Sendero Bari	17/11/2011	6	Fagus sylvati	1940-2006	1254,00	337,7510	0,0298	23,7697
MY29_FASY	59	Sendero Bari	17/11/2011	6	Fagus sylvati	1940-2006	1177,00	30,9638	0,8995	32,0702

Pendiente(c	Rad_directa	Rad_directa(	Orientacio(c	Altura/Orientacion(cos)	CoordX	CoordY	Tmp,prev,se	Tmp,prev,oc	Tmp,prev,no
0,79349029	842990	0,9872	0,00073403	1362,33754393	597806,651731	4629419,224070	-0,02590360	-0,00136810	0,04681723
0,51917423	770135	0,2614	-0,00070682	-1414,79213059	596518,021106	4628860,564870	0,12389655	-0,0006035	-0,03013466
-0,22621105	706884	0,8677	0,00029666	3370,90215393	597391,112497	4628508,915660	0,0411012	-0,05671984	-0,00588131
0,99932339	916163	0,6851	0,00008589	11642,85651193	599255,364394	4626612,701170	-0,03808222	-0,00072005	0,08537252
0,03122349	634721	0,9953	0,00032569	3070,43863676	600971,275985	4624665,913040	0,05149859	0,01045243	-0,06283336
0,05849515	834739	0,5254	-0,00066682	-1499,65742351	602707,016011	4625096,851890	-0,15031082	0,03825246	-0,00456171
-0,85179727	953112	-0,9962	0,00058914	1697,37976636	597744,937546	4628122,514660	0,05322178	0,00935612	-0,00127764
-0,30978076	891702	0,1939	0,00022566	4431,42984722	597866,159168	4629352,256890	-0,09977842	0,11077043	0,02071772
-0,93053513	1238801	-0,3249	-0,00060318	-1657,88429989	602594,394143	4623979,306500	-0,03046686	-0,04394	0,02095078
-0,4815182	862781	0,6420	-0,00010267	-9740,31320488	596503,949212	4629968,534150	-0,03470637	0,15704996	0,06651278
0,36635114	754744	0,0730	0,00037742	2649,57378194	593491,671868	4629653,243920	0,07837847	0,07584659	0,09792593
0,1707293	825795	-0,6190	-0,00024053	-4157,44599079	596219,229939	4628874,290710	0,03170452	0,05640972	0,02839074
-0,91086581	787165	0,3044	-0,00075748	-1320,16254189	596521,786634	4629089,198740	-0,00765008	-0,04469964	0,02107021
0,20626379	869612	0,9542	0,00002375	42101,25800968	597145,019921	4629360,189870	-0,09613779	0,09272298	0,03283644
0,79349029	842990	0,9872	0,00076425	1308,47548999	597802,195739	4629409,468730	-0,15298164	0,03722479	0,05222071

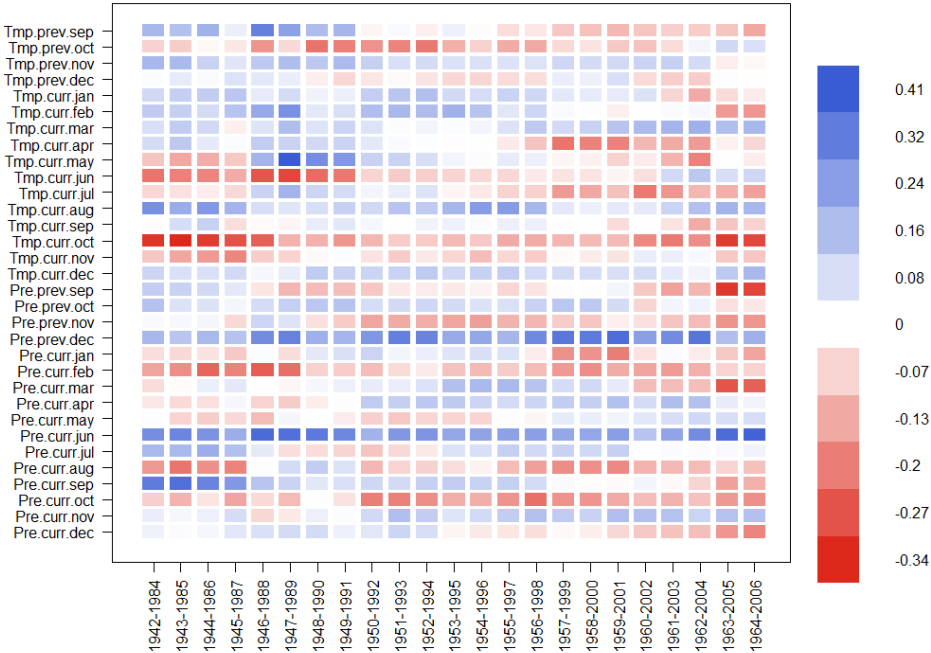
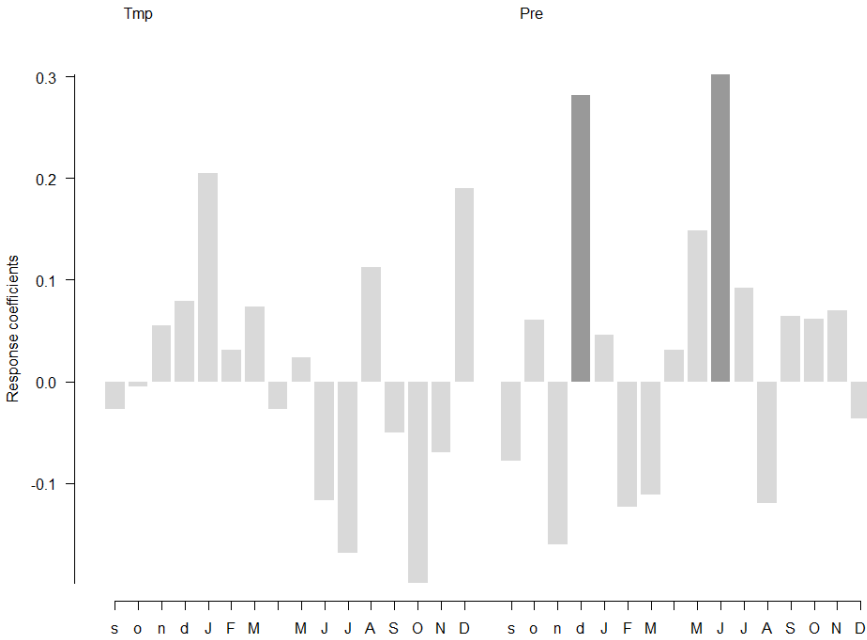
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0,07435154	0,20647133	0,03660360	0,08333775	-0,02732702	0,01894111	-0,12066692	-0,16873189	0,10451531	-0,05670990
0,002622054	0,1612213	-0,090475123	0,076949494	-0,233152487	0,141637869	-0,089567388	-0,177549956	0,191551973	-0,031620194
0,057390478	0,017275373	-0,049458301	-0,037038374	-0,359289723	0,177555996	-0,010843522	0,030937345	0,234357904	0,046877171
0,1258105	0,217696404	0,002328841	0,111630233	-0,211294902	0,128006541	-0,11083792	-0,104476261	0,237423512	-0,012314664
0,131319213	0,28821936	-0,07477098	0,01892629	-0,329968937	0,174811517	0,003876222	-0,032844947	0,247393734	0,049422489
-0,021718145	0,148152306	-0,023375771	0,022462489	0,076914338	-0,000660294	-0,072498924	-0,121581803	0,015290379	0,064743565
0,072457869	0,134495835	0,025057032	0,011435145	-0,27148487	0,103957183	0,003541211	0,00409713	0,205602726	0,040532708
0,122621886	0,139000047	0,118984945	0,10011828	0,089002318	0,034975967	-0,050842948	-0,144528152	0,067089413	0,130789736
0,191792836	0,228078178	0,007334996	0,013531827	-0,228353389	0,166471851	-0,15945738	-0,165290079	0,141975517	0,060130775
0,026823833	0,155058648	0,024576019	0,035230472	-0,062159951	0,008692796	-0,090708823	-0,146272446	0,081092071	0,067815689
0,01948688	0,108254047	0,017469047	-0,097949105	-0,180506515	0,108490003	0,027178427	0,111719553	0,197016609	0,078705153
0,047499761	0,159536556	-0,079974941	0,094720841	-0,159485531	0,063324059	-0,136752024	-0,182314112	0,170966217	-0,06818131
-0,031323379	0,038515464	-0,123473865	0,017027639	-0,166840477	-0,074856793	-0,185752	-0,147469712	0,157295231	0,02136335
0,12062747	0,136061552	-0,006921847	0,004427714	-0,057297978	0,100472481	-0,145971816	-0,178561249	0,179507985	0,015868823
0,021607414	0,150138478	0,077082253	0,097642917	0,125621912	0,060559644	-0,142390893	-0,234505334	0,064963663	-0,014833847

Tmp,curr,oct	Tmp,curr,nov	Tmp,curr,dec	Pre,prev,sep	Pre,prev,oct	Pre,prev,nov	Pre,prev,dec	Pre,curr,jan	Pre,curr,feb	Pre,curr,mar
-0,19956464	-0,06225786	0,18968159	-0,07620966	0,06053361	-0,16547394	0,28465912	0,04516382	-0,13750688	-0,11102970
-0,300399998	-0,018593243	0,080001885	-0,009038903	-0,06313991	-0,118403281	0,203816962	-0,093272692	-0,166242264	-0,118778788
-0,409771937	-0,08620171	-0,085181298	0,037831977	-0,030328494	-0,082121235	0,113036354	-0,206531036	-0,058762688	-0,109759751
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-0,244182794	0,091695231	0,121874494	0,055802292	0,051452282	-0,152890454	0,215290279	0,17702823	-0,146256724	-0,22101752
-0,338343014	-0,076910598	-0,041496476	-0,037809826	0,08253799	-0,037666055	0,075062256	-0,114157606	-0,051089019	-0,06794132
-0,194723379	-0,074639937	0,072729031	-0,036826288	0,060506503	-0,087484726	0,392270088	0,115037605	-0,124290134	-0,177638866
-0,370401879	-0,097488718	0,032332888	0,090872735	-0,038881599	-0,024460218	0,319099846	-0,005500242	-0,011723536	-0,192769376
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-0,345545941	-0,035612058	0,001508778	0,110573064	0,040910097	-0,110216437	0,008084558	-0,119777986	0,072735879	0,004426732
-0,312162458	0,061372571	0,039677039	-0,020338163	-0,024053464	-0,09522139	0,237027716	-0,01291488	-0,281054785	-0,148841075
-0,303870683	0,032800758	0,002504475	0,026887063	0,013652321	-0,131273427	0,164608567	-0,018650348	-0,261527594	-0,203376799
-0,294906585	-0,036498853	0,130674134	0,069273942	0,060461199	-0,101196735	0,246945037	0,058660824	-0,03738325	-0,302842453
-0,101674643	-0,031699653	0,228008886	-0,055800061	0,042409602	-0,173857506	0,280849131	0,173865839	-0,214722851	-0,160984385

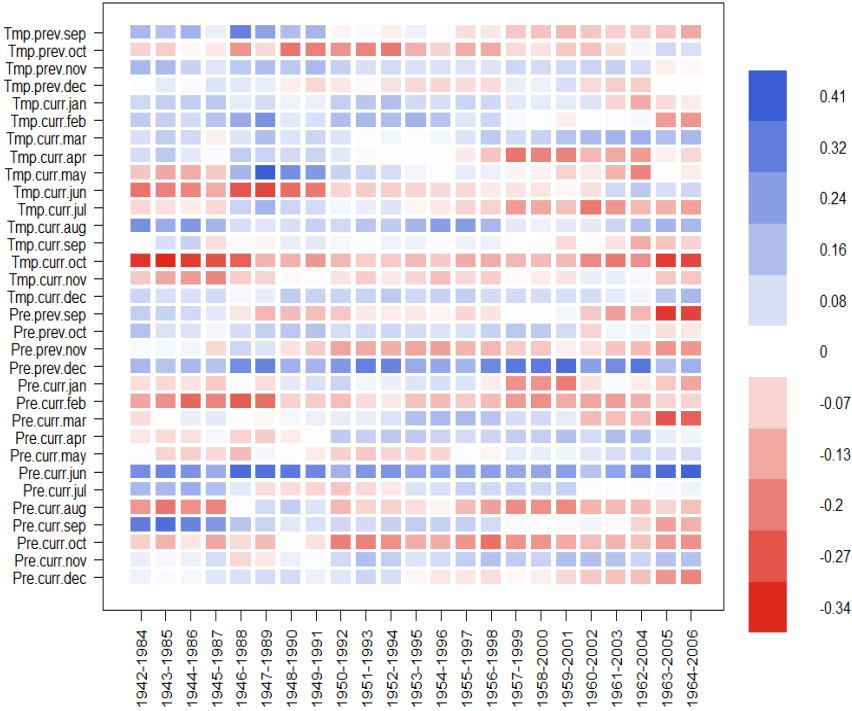
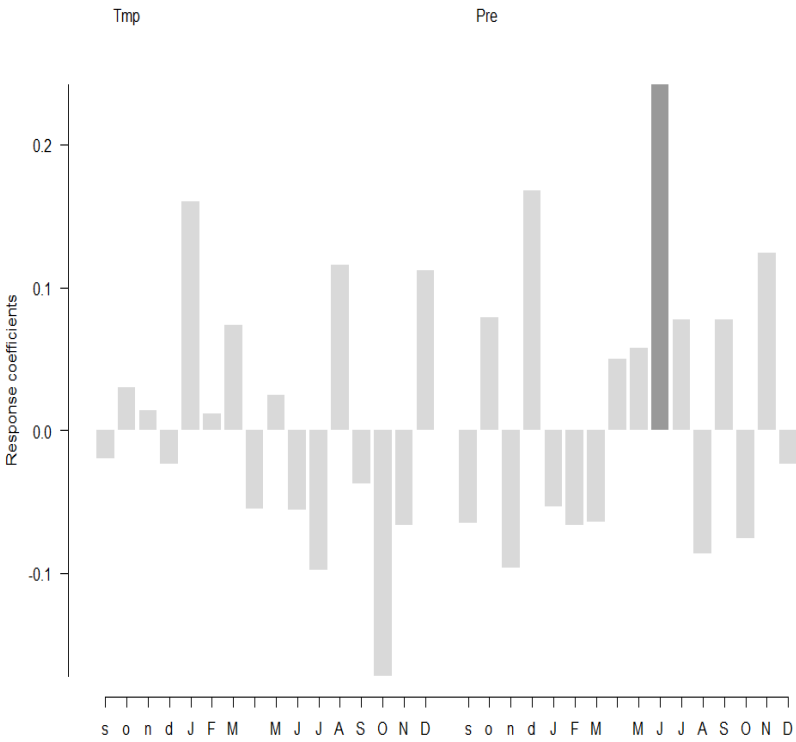
Pre,curr,apr	Pre,curr,may	Pre,curr,jun	Pre,curr,jul	Pre,curr,aug	Pre,curr,sep	Pre,curr,oct	Pre,curr,nov	Pre,curr,dec
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0,160958217	0,156082231	0,25000181	-0,078490911	-0,014762842	0,123435186	0,068207559	-0,204117724	-0,016699613
0,1194246	-0,059944645	0,133744235	-0,172519889	-0,129501509	0,160880158	0,004337124	-0,106092844	-0,21223132
0,110656672	0,045200015	0,263159033	-0,080514404	-0,11827527	0,196236285	0,038383644	-0,172775789	-0,232870045
0,154922527	0,015957948	0,131986511	-0,121057034	-0,012586181	0,13608105	0,07995066	-0,222309486	-0,245407963
-0,016216257	0,130478792	0,335820935	0,13647807	0,00940575	0,052069141	0,046777226	0,223414055	-0,048641994
0,196002133	0,010461403	0,159146306	-0,213828254	-0,182150109	0,102133861	0,029933669	-0,011583752	-0,27242927
-0,011140614	0,176443065	0,268210917	0,10624441	-0,140559163	0,103529524	0,053820752	0,117259188	-0,037099569
0,027736665	0,005445146	0,36603921	0,132054262	-0,004546645	0,008157813	0,142472013	-0,18700903	-0,102456306
0,122876829	0,147798188	0,234899862	0,041604984	-0,165666051	0,073261155	0,056409531	0,104527167	0,021835568
0,084614805	-0,12878116	0,116636084	0,119510128	-0,179259966	0,104578492	0,109143858	-0,10254857	-0,149301639
0,158276319	0,094055883	0,277019087	0,020833602	-0,0775389	0,126792692	0,061114684	-0,063869507	-0,114797699
0,104951552	0,164475727	0,364441442	0,063087425	-0,166630168	0,098888769	0,066335061	-0,047103133	-0,199029532
-0,01837377	0,18076323	0,287461744	-0,077833589	-0,14598896	0,119043524	0,124544721	-0,036364322	0,048891066
-0,01279479	0,160685743	0,371480589	0,151948214	-0,129788592	0,014592034	0,024631695	0,122761929	0,068982231

2. Gráficos de correlaciones y funciones respuesta
MY01_FASY

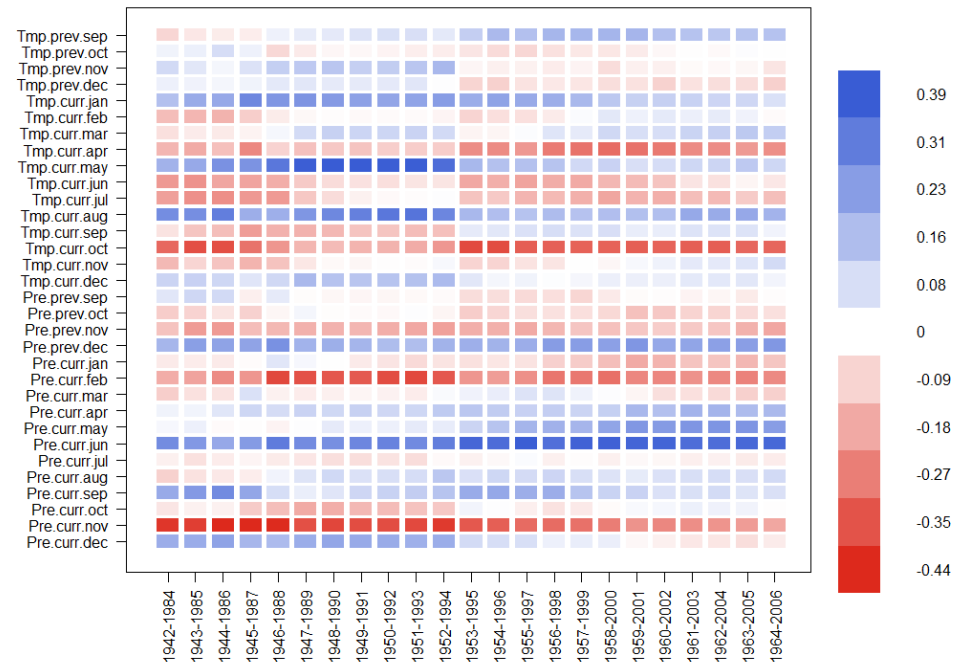
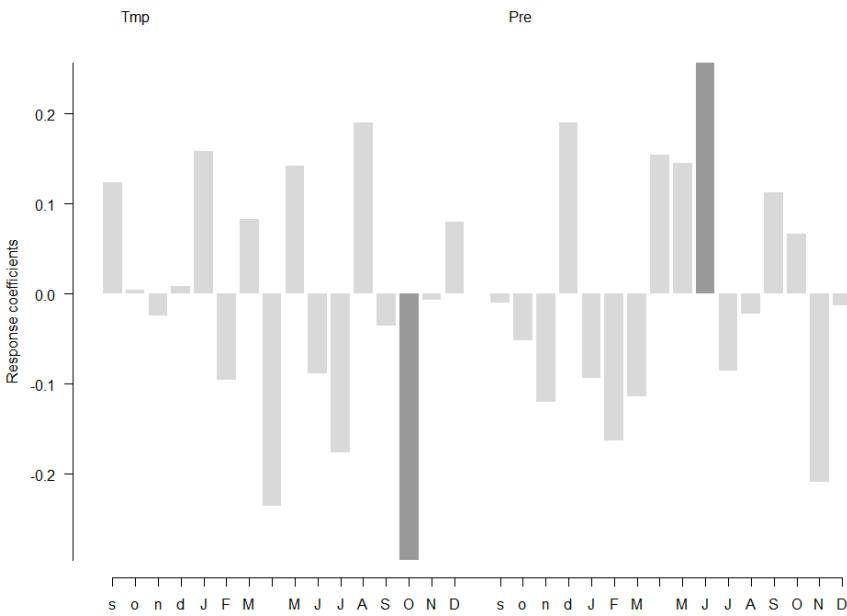
Correlación



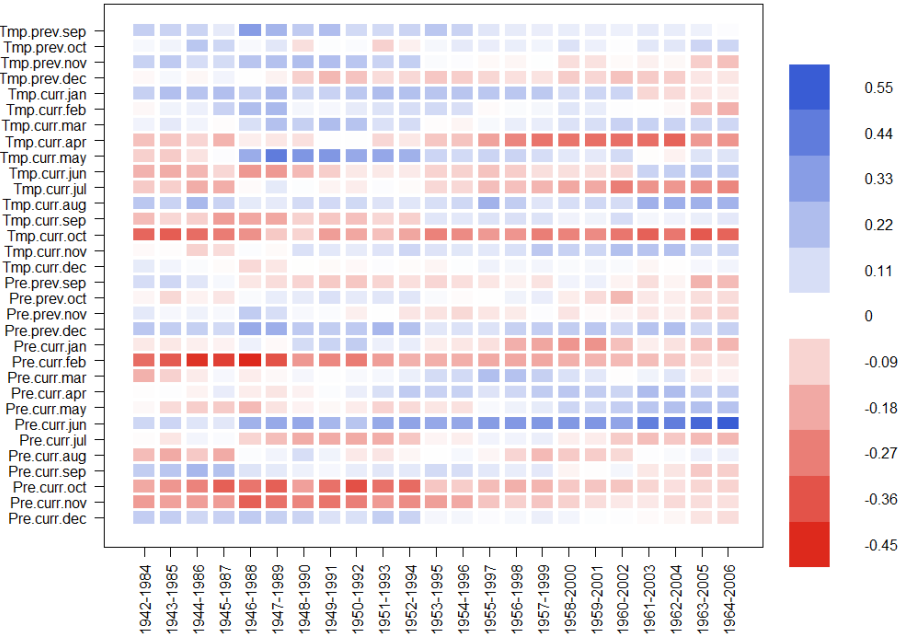
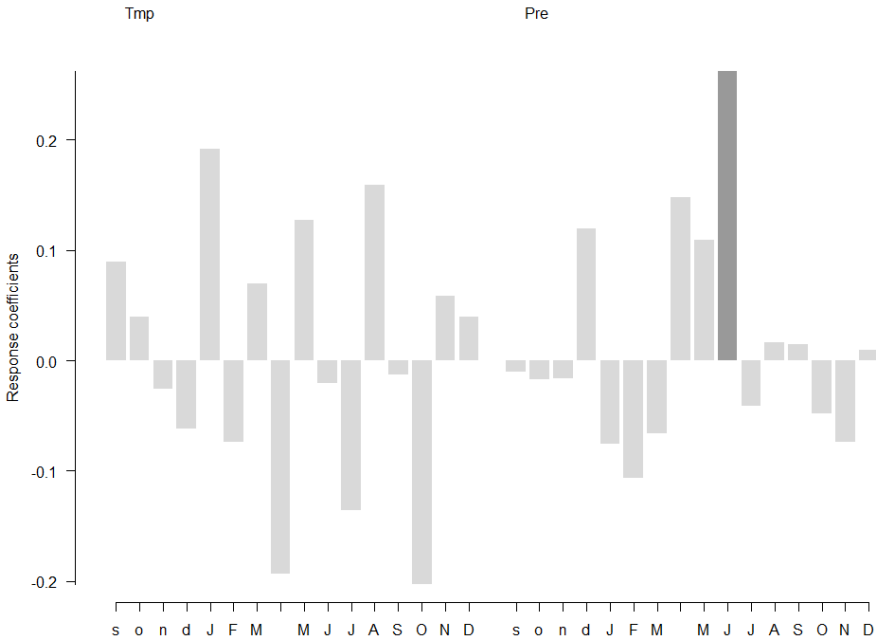
Función respuesta



MY02_FASY
Correlación

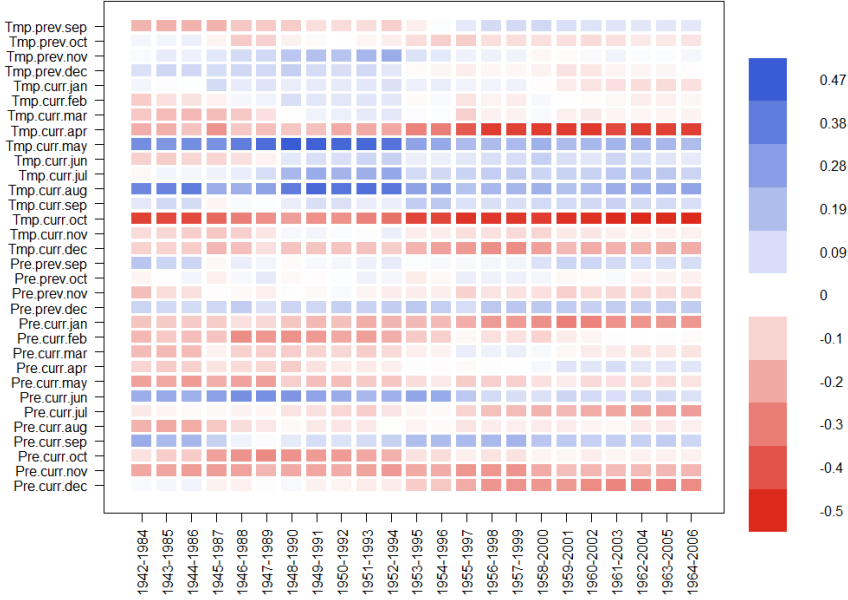
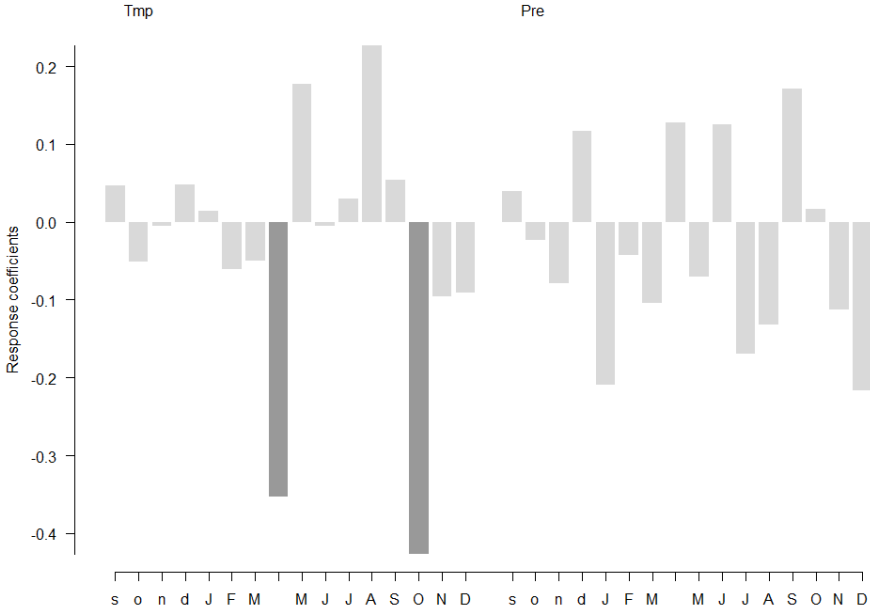


Función respuesta

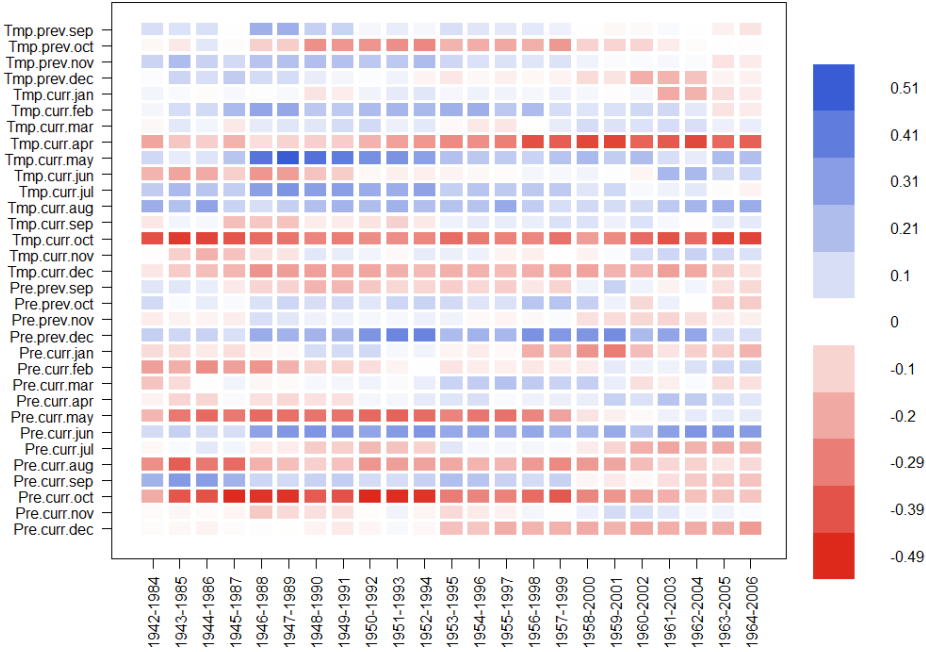
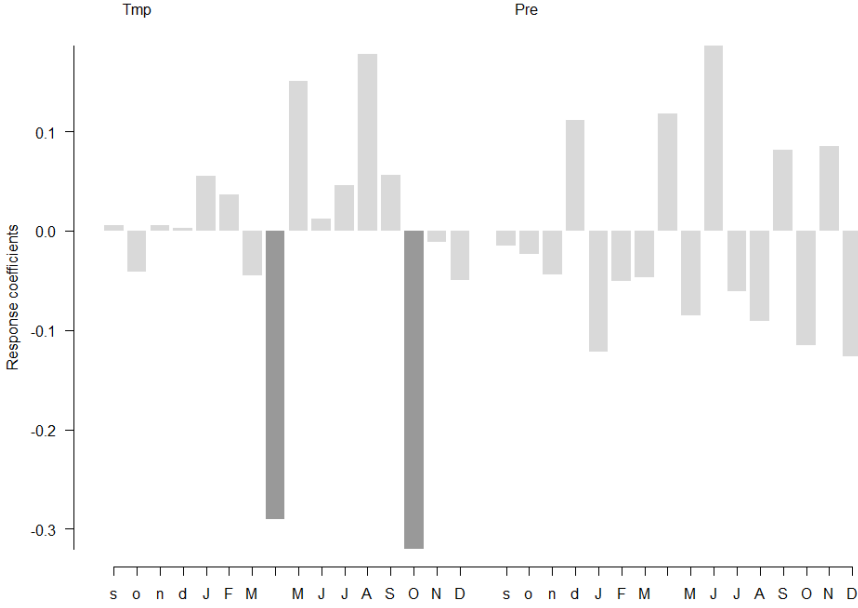


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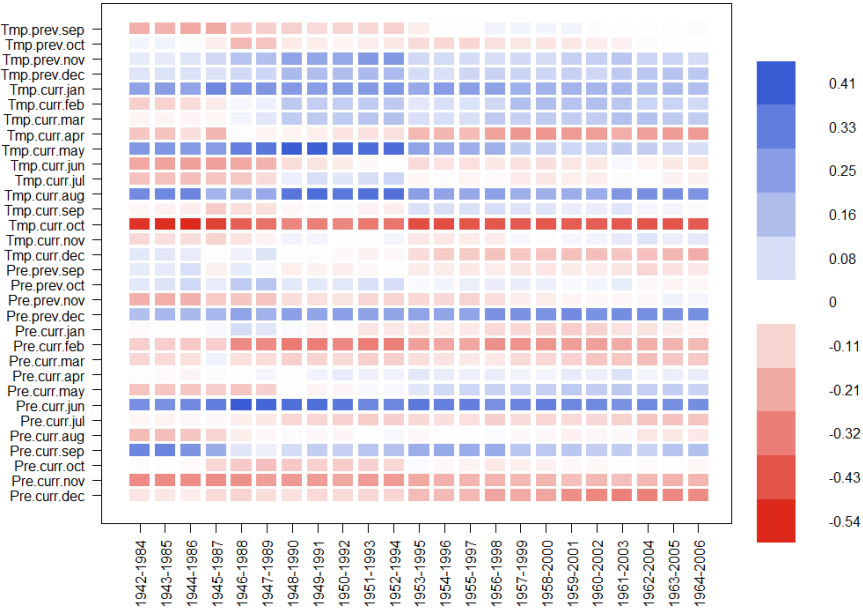
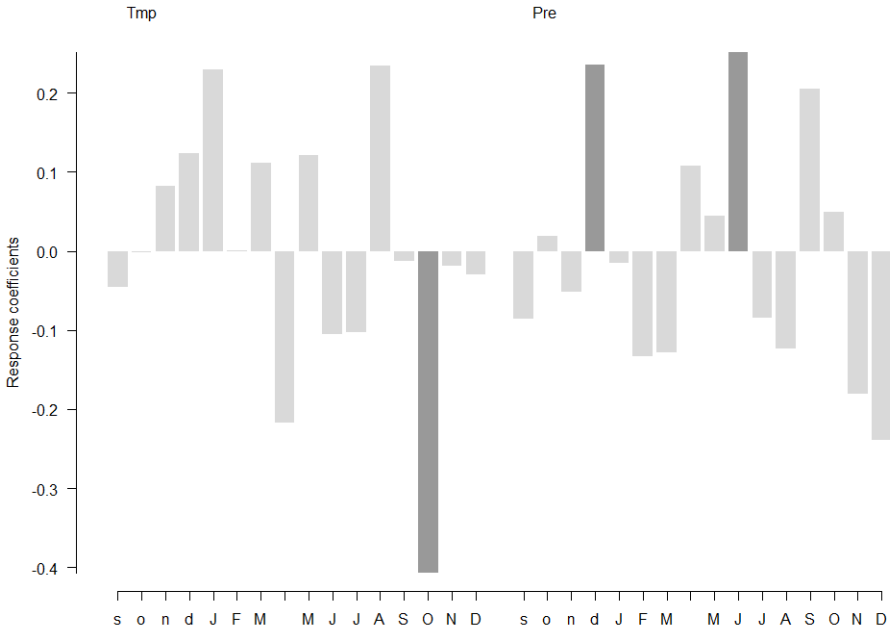
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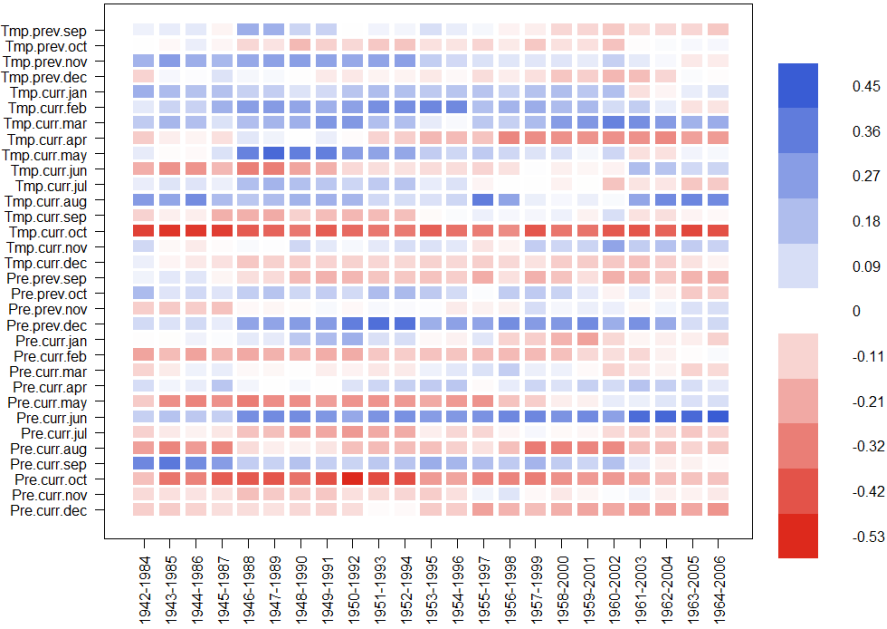
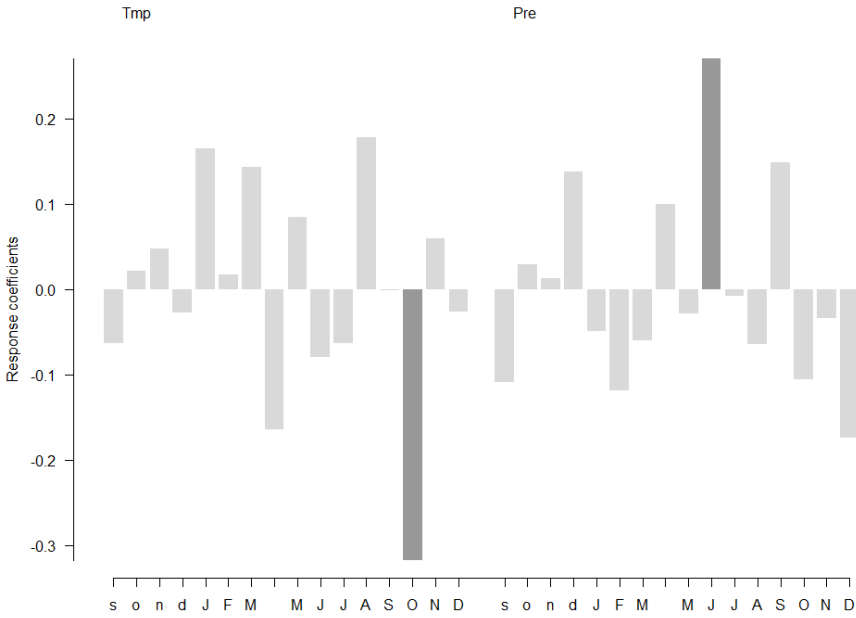
Función respuesta



MY04_FASY
Correlación

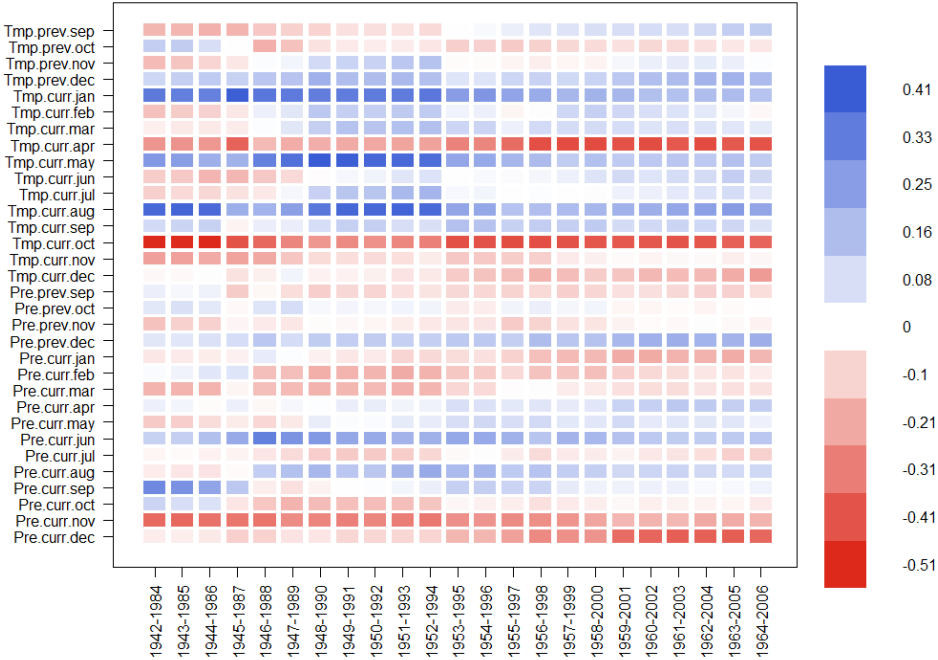
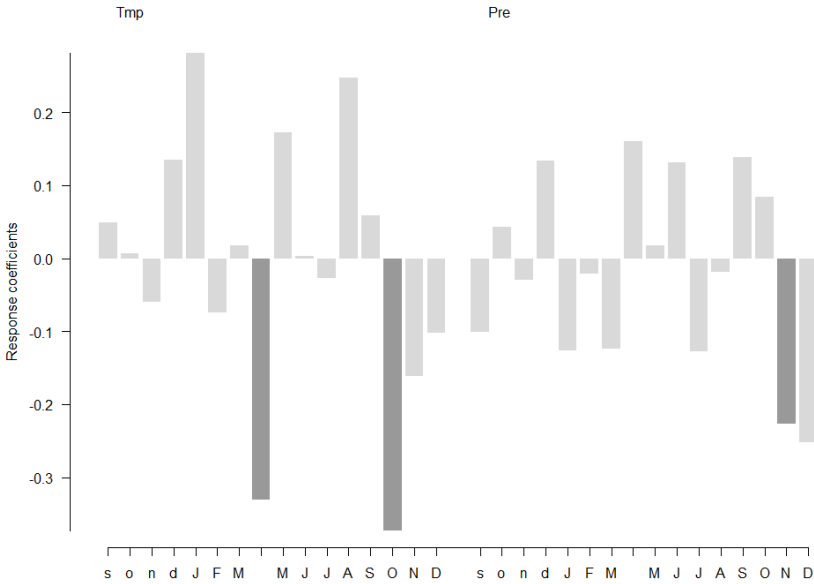


Función respuesta

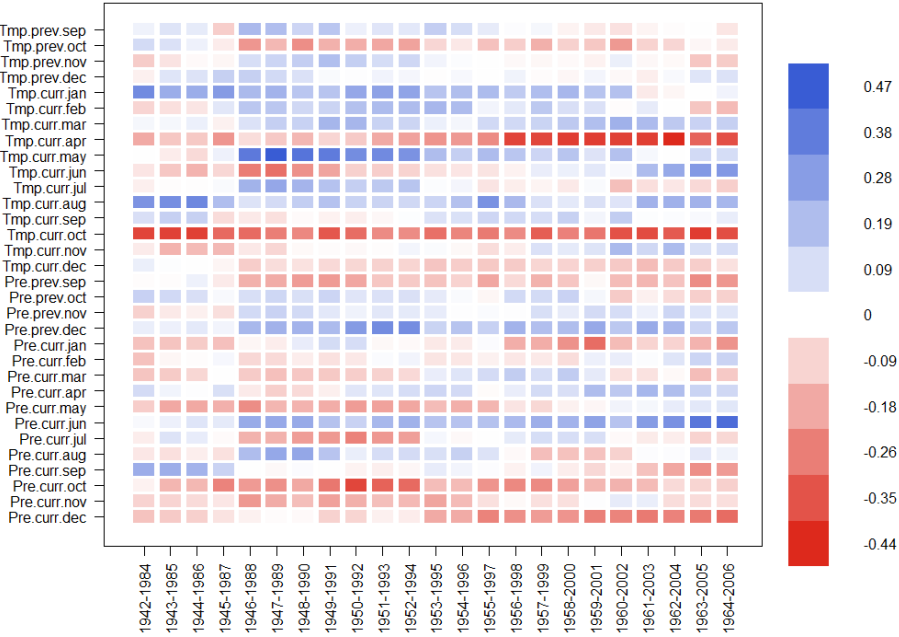
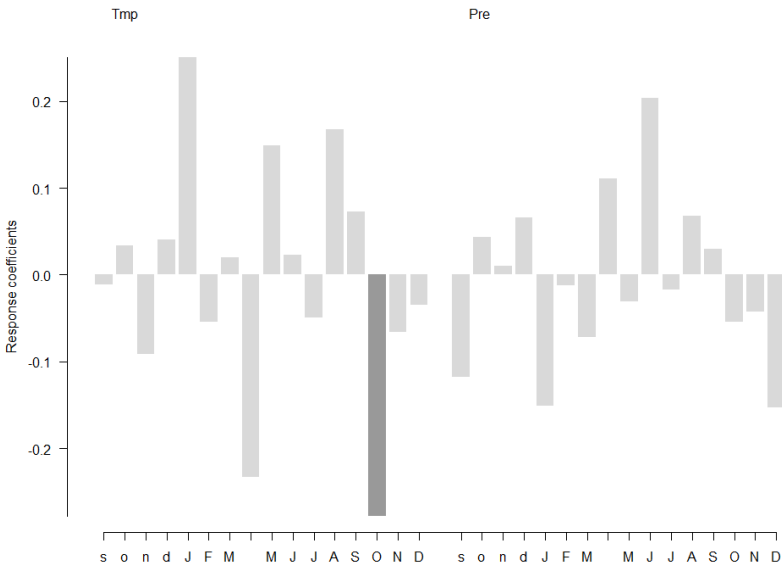


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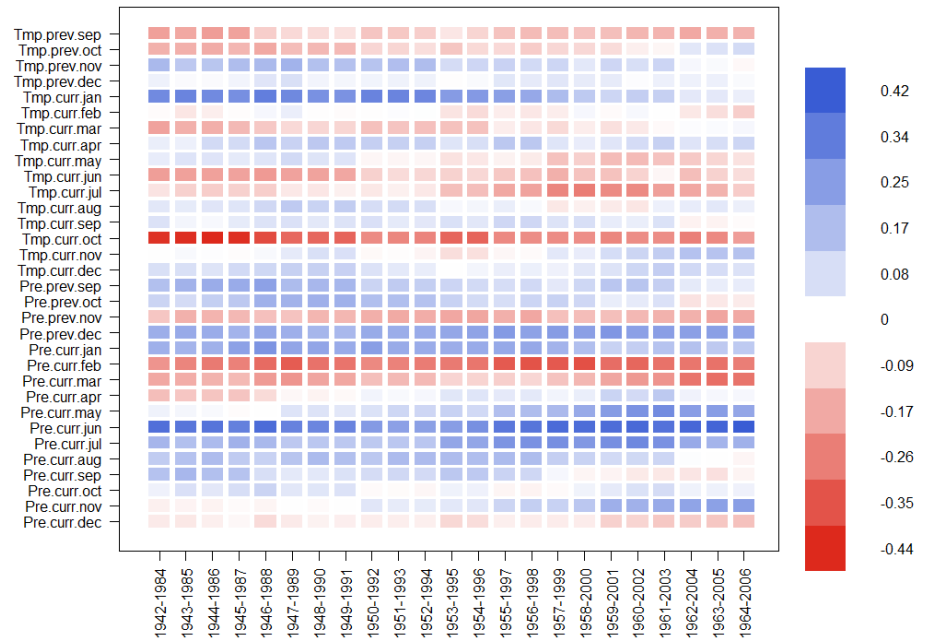
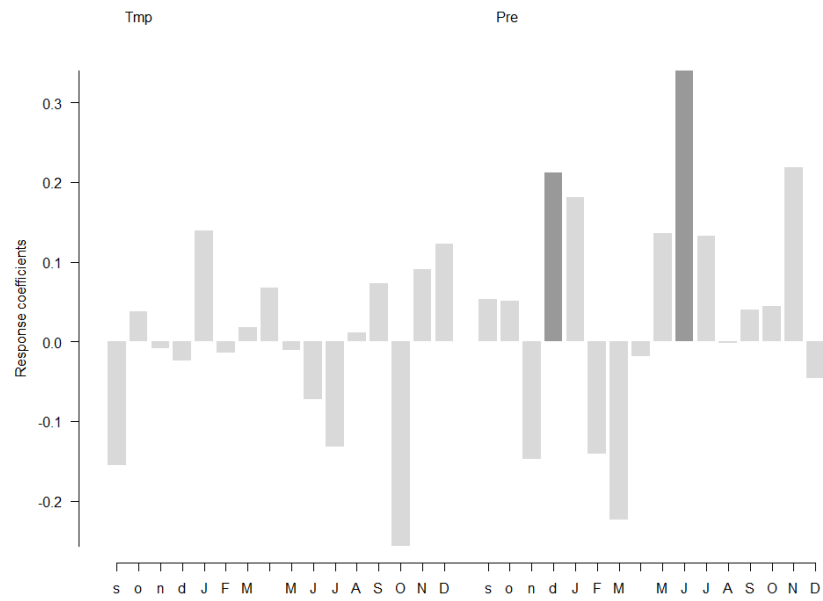
Correlación



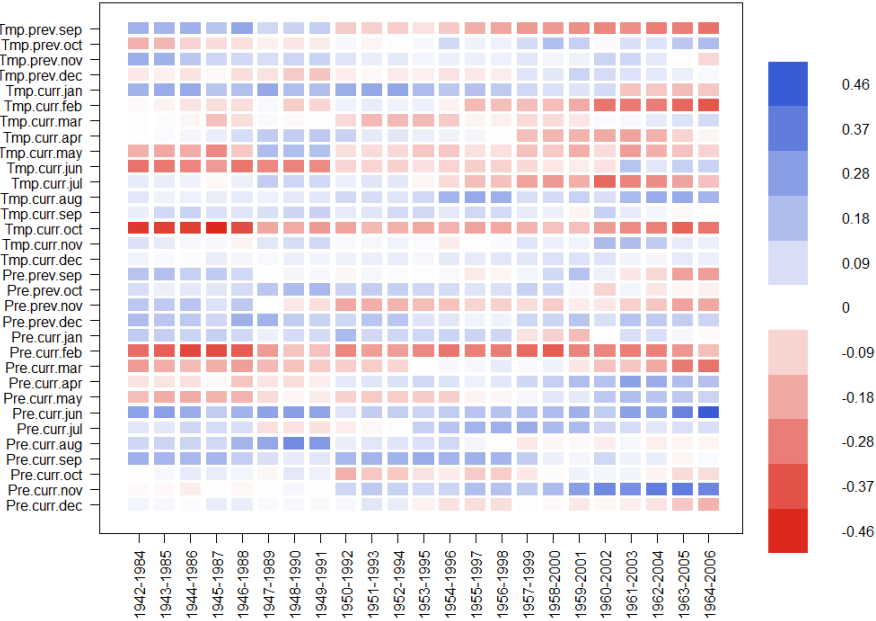
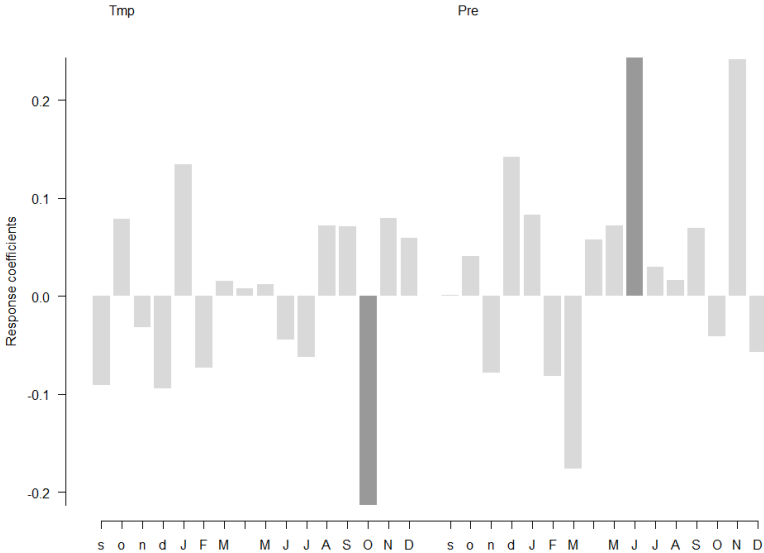
Función respuesta



Correlación

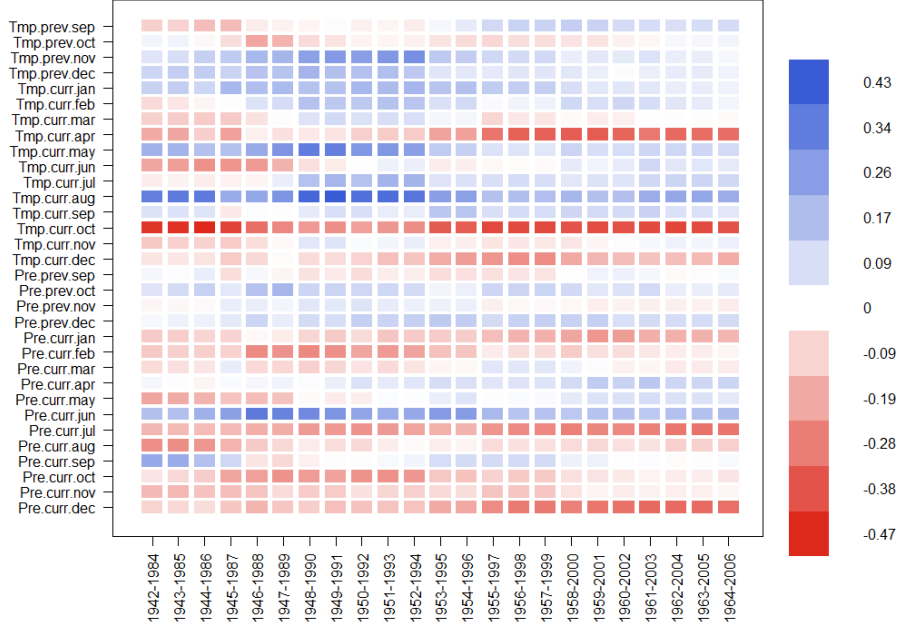
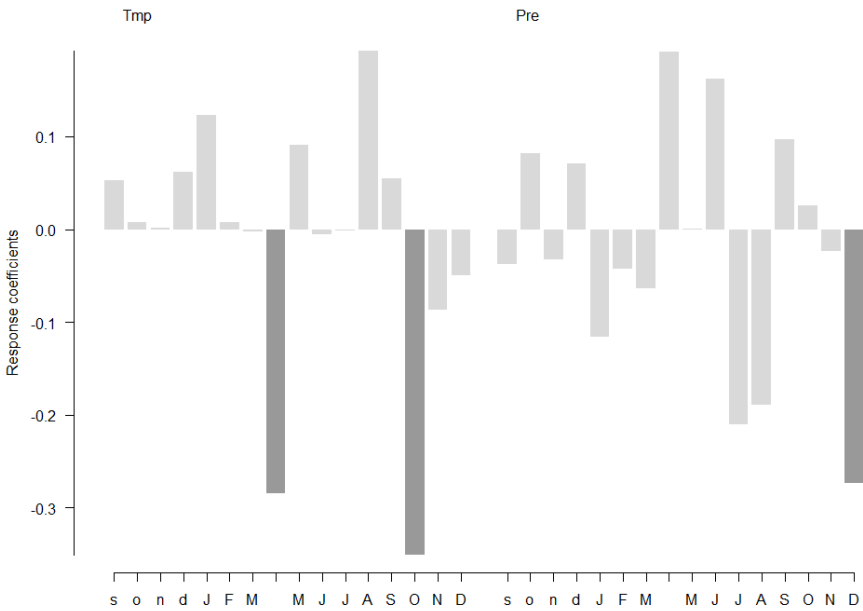


Función respuesta

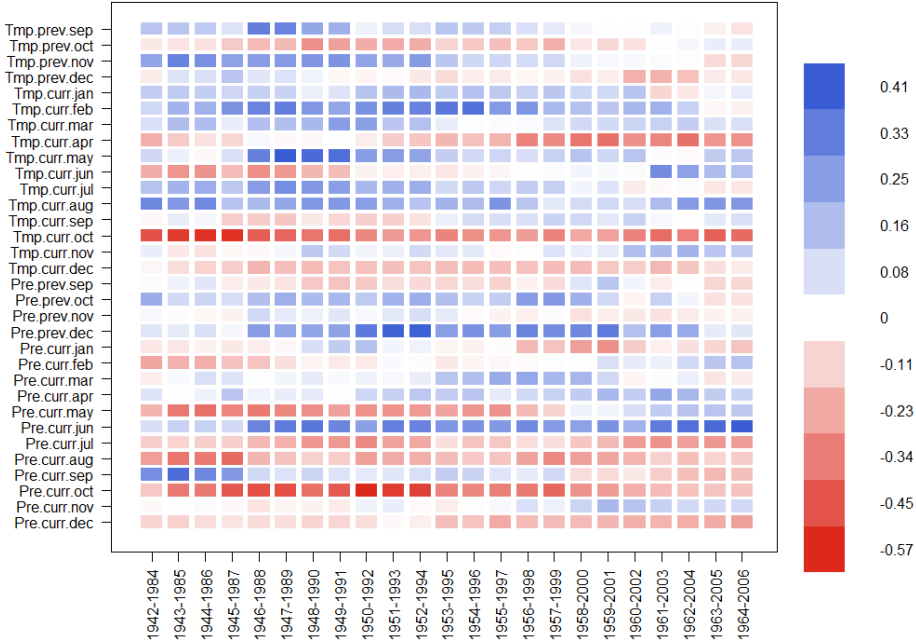
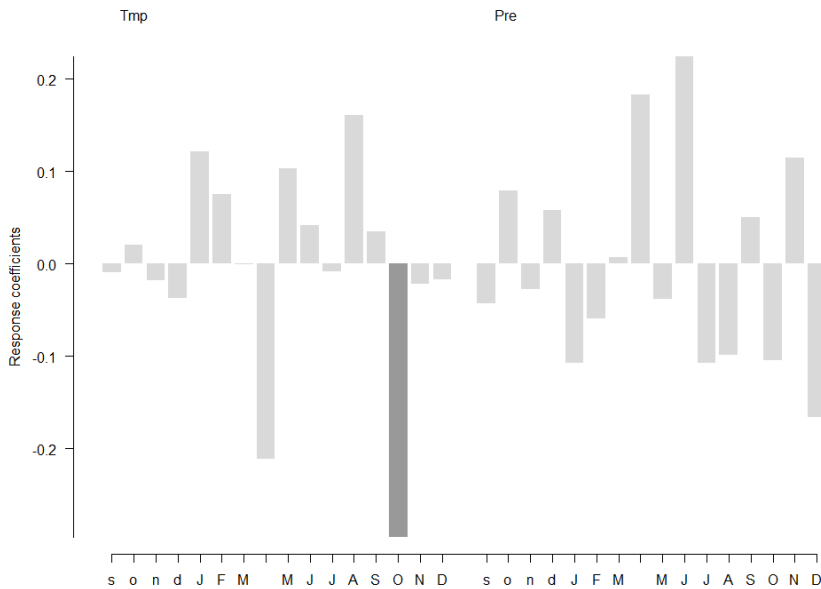


MY10_FASY

Correlación

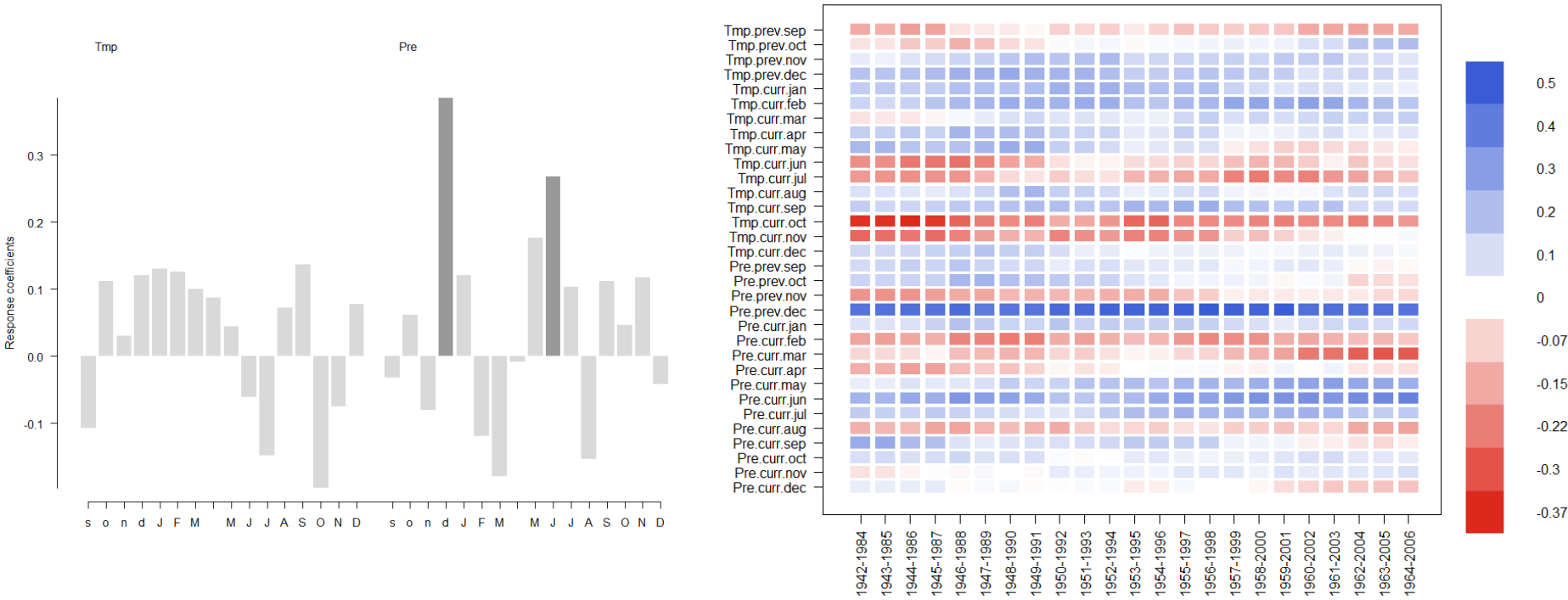


Función respuesta

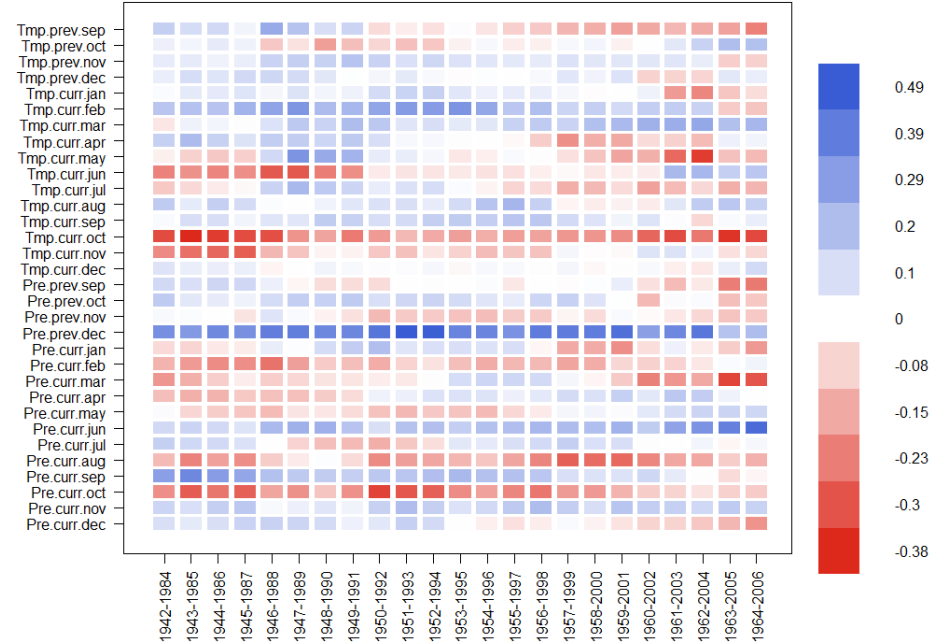
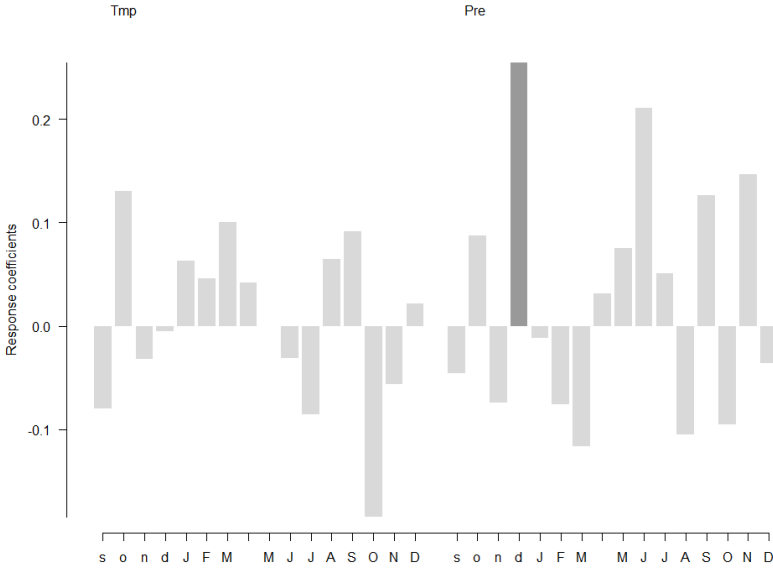


MY11_FASY

Correlación

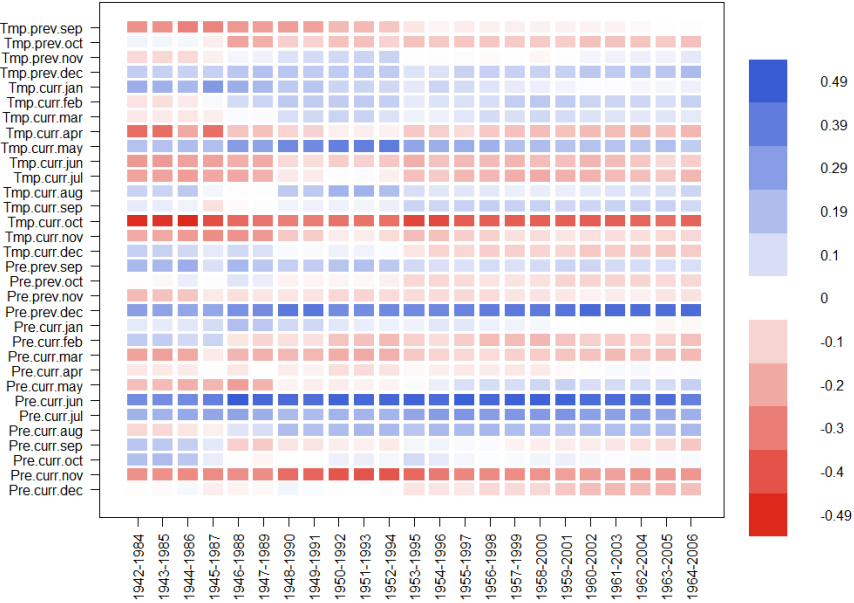
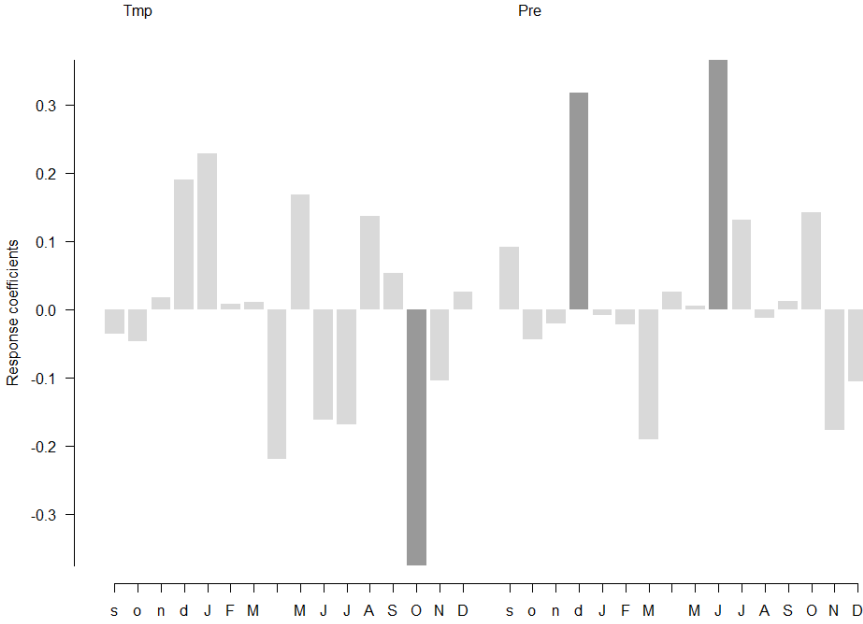


Función respuesta

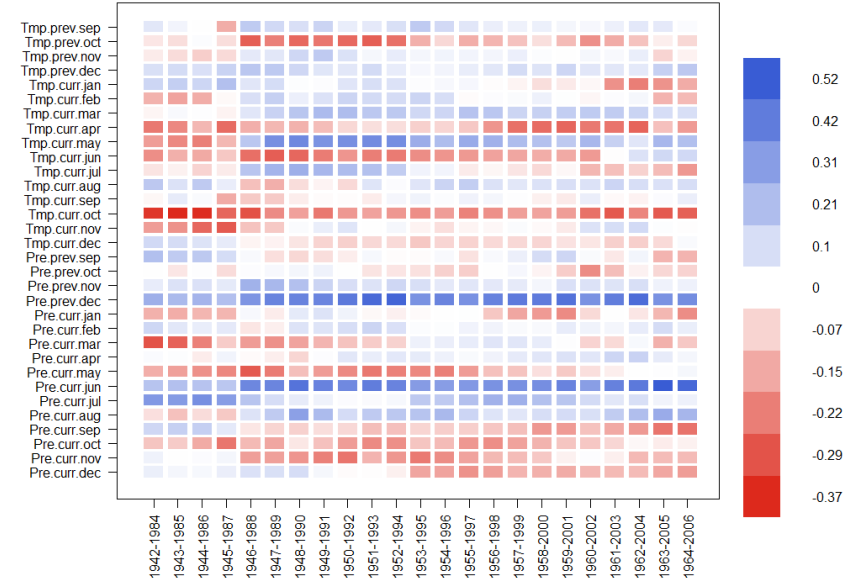
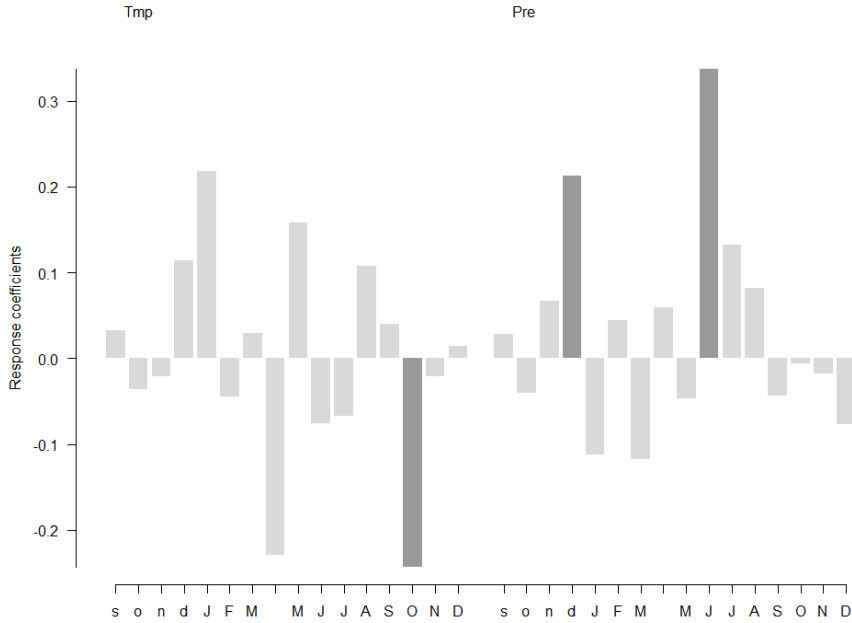


MY14_FASY

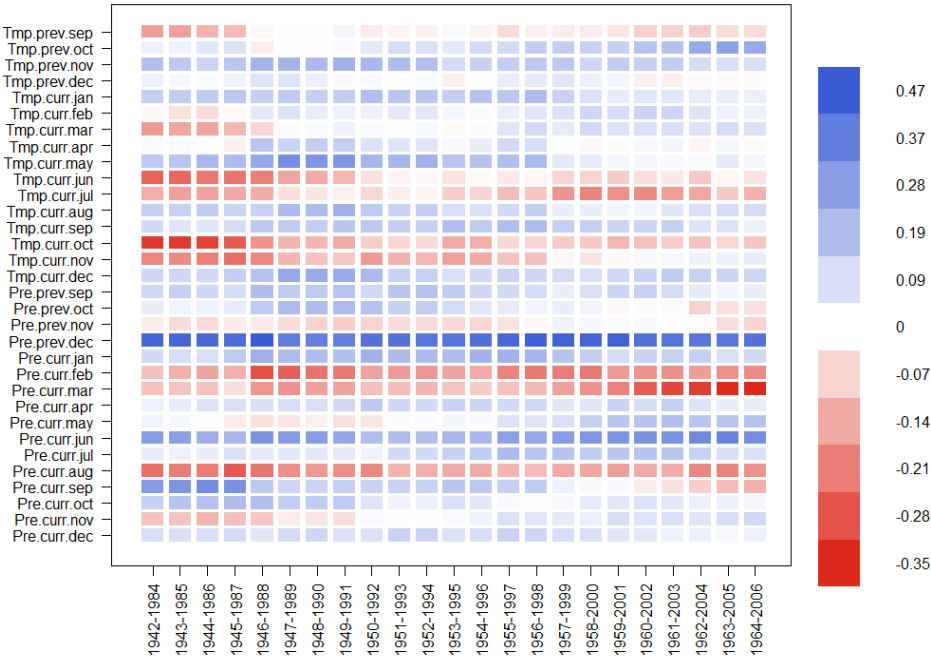
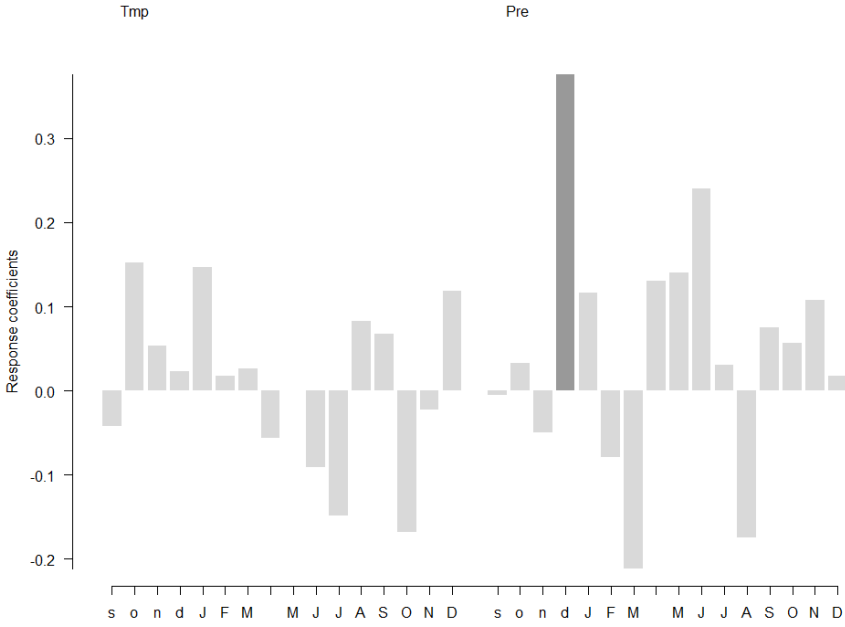
Correlación



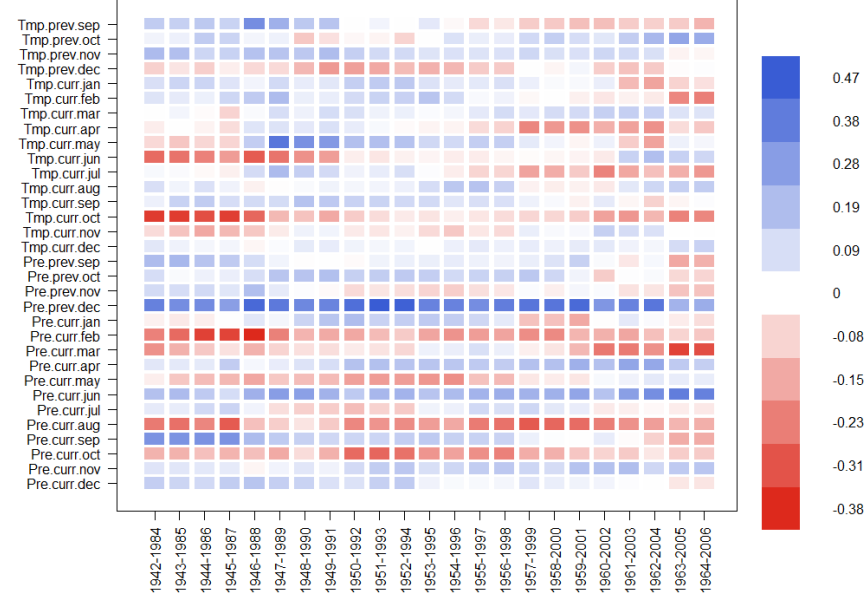
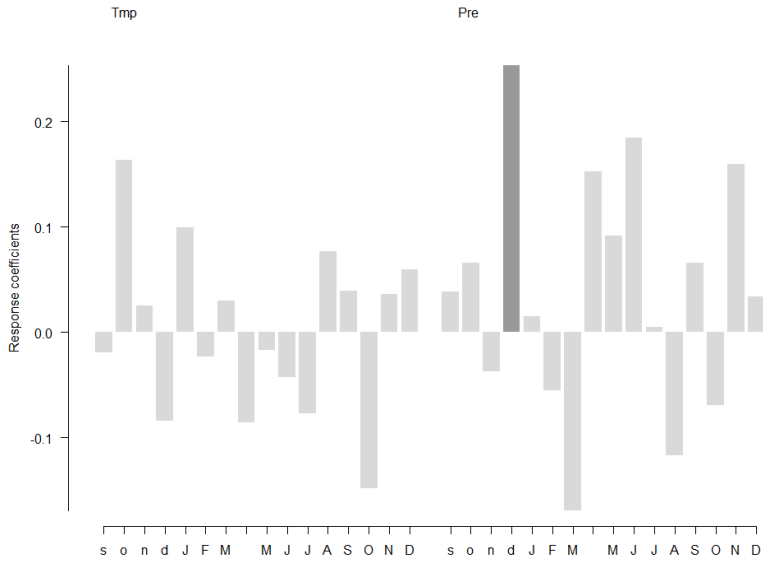
Función respuesta



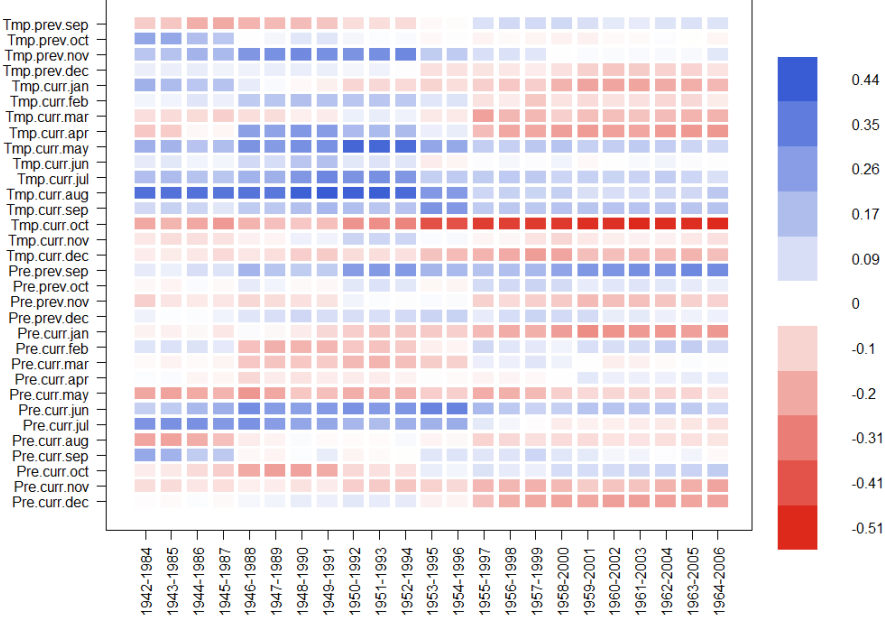
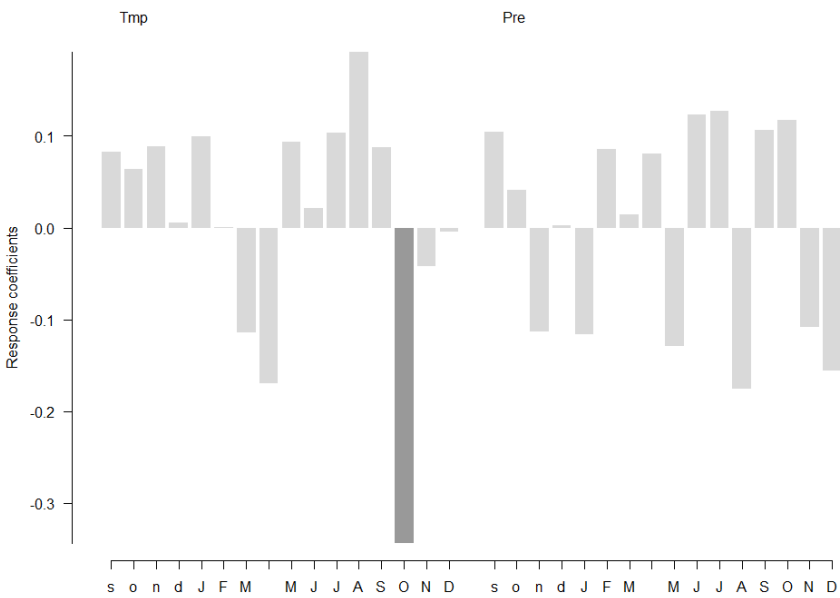
MY16_FASY
Correlación



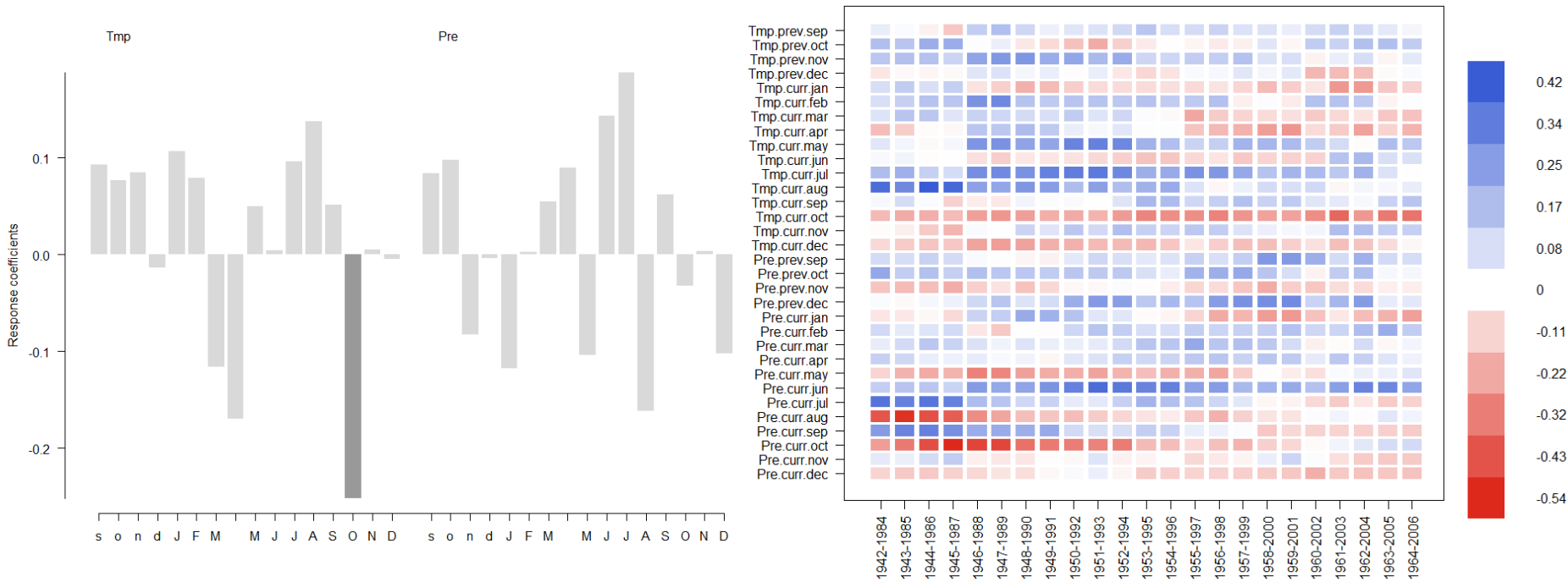
Función respuesta



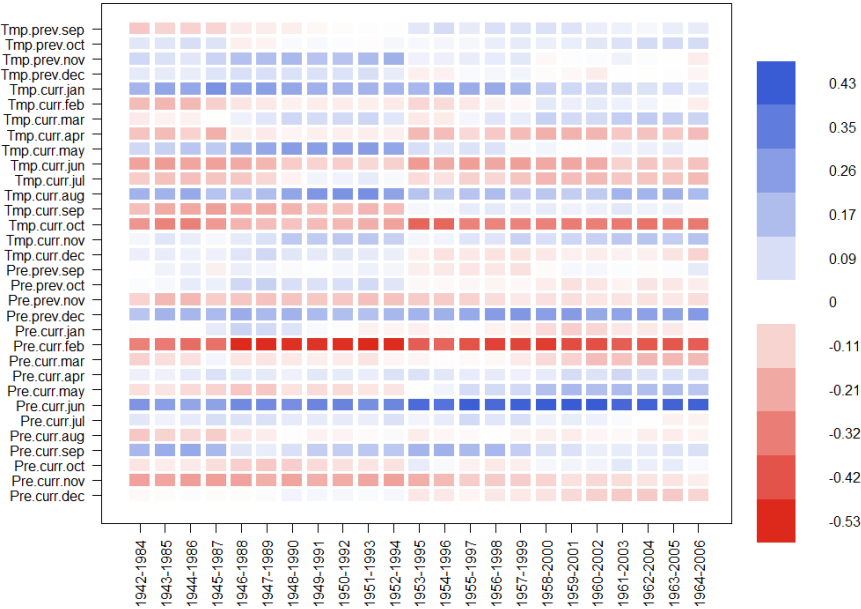
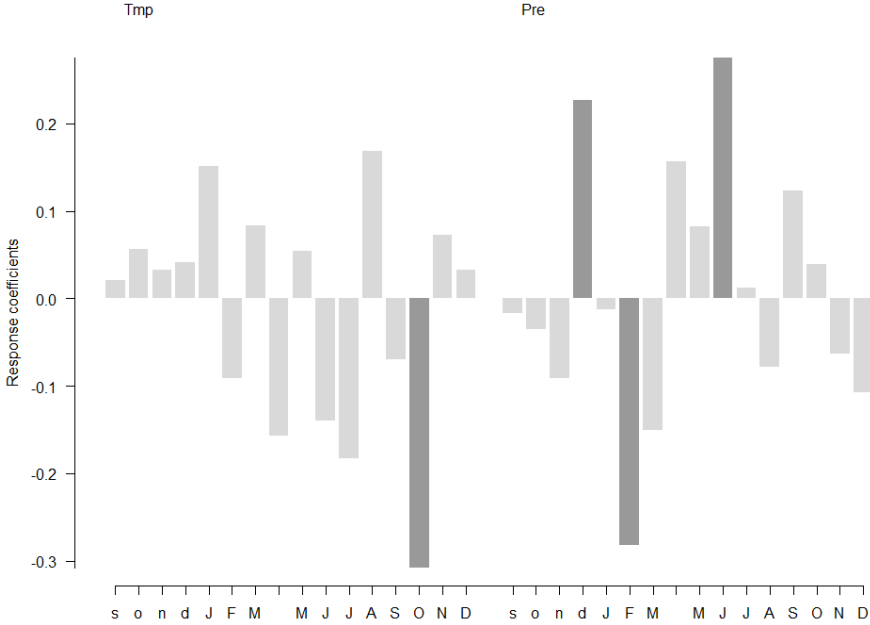
MY17_FASY
Correlación



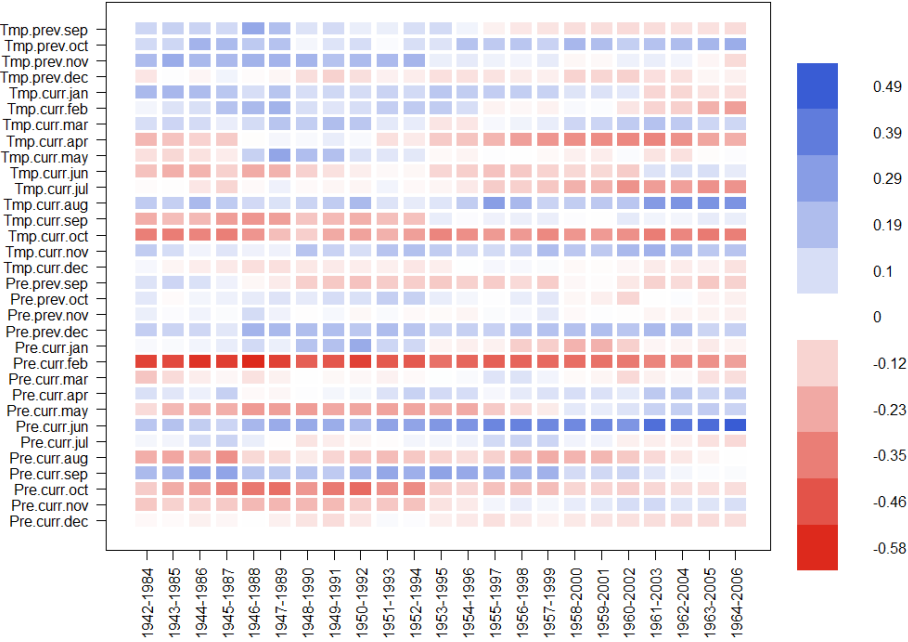
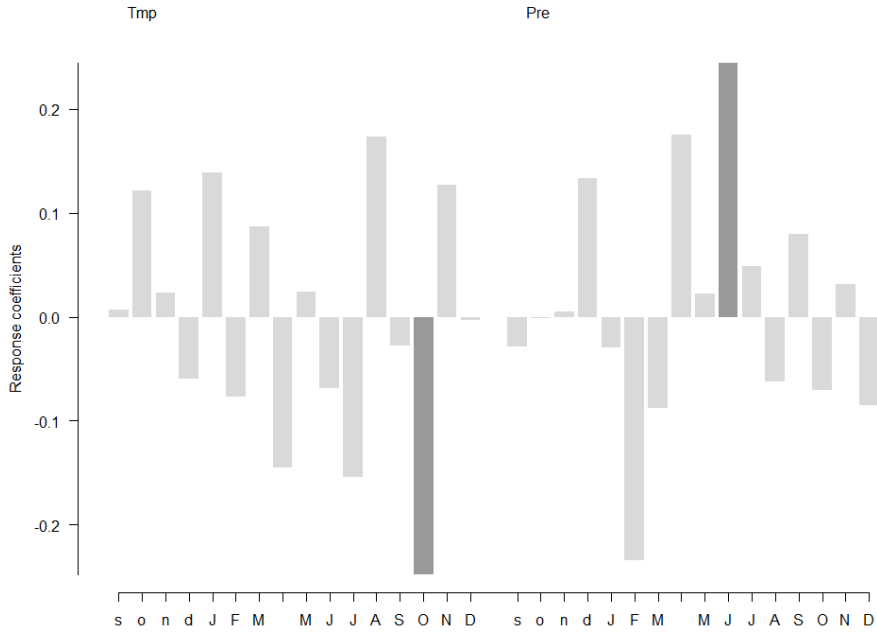
Función respuesta



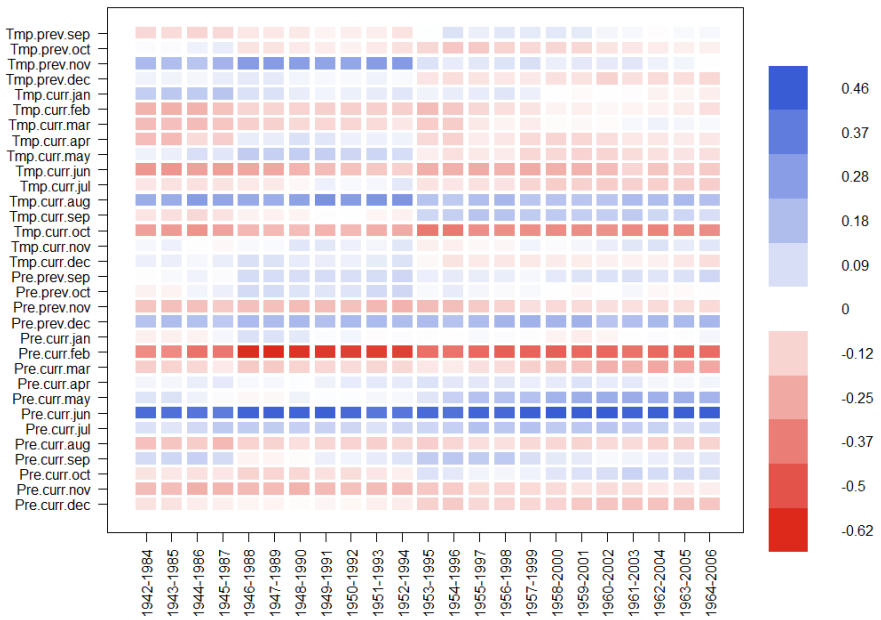
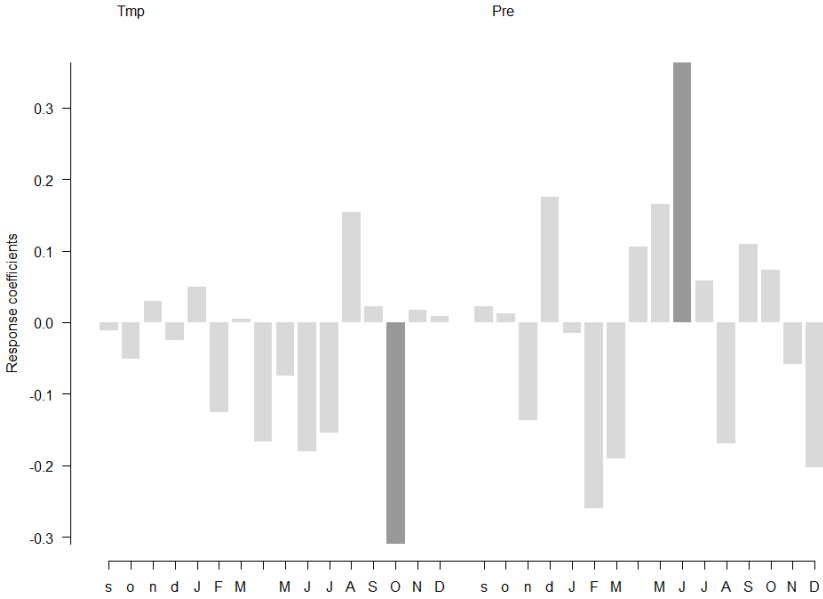
MY26_FASY
Correlación



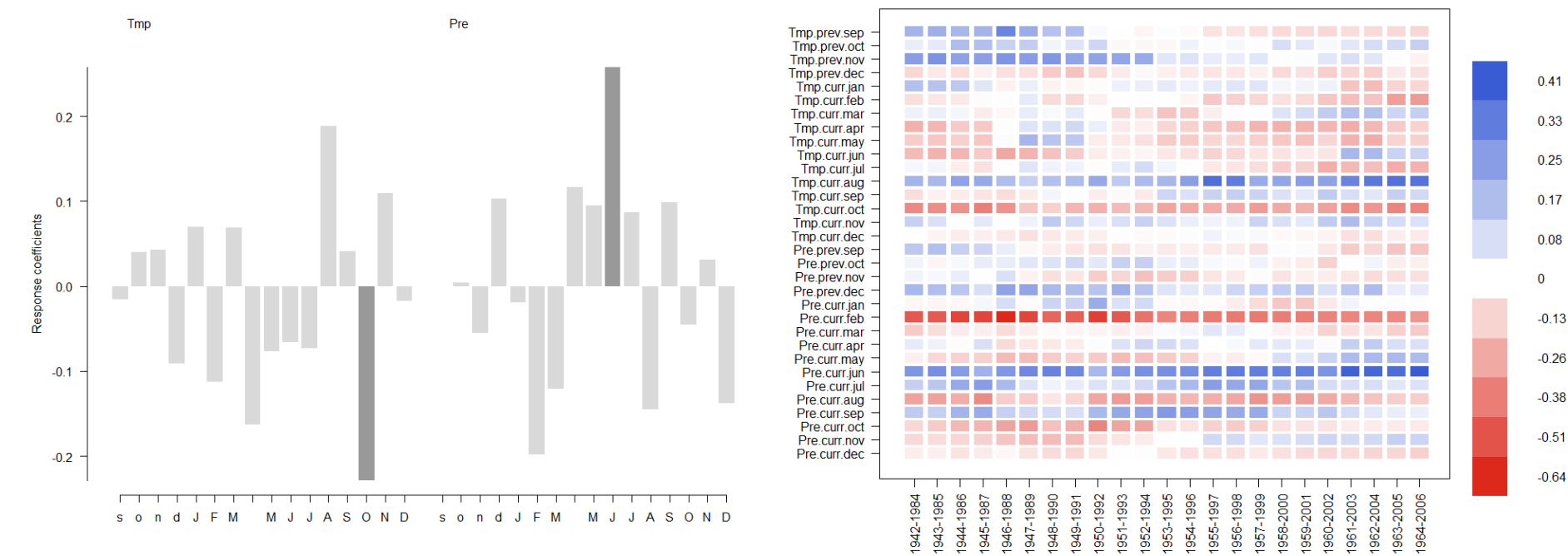
Función respuesta



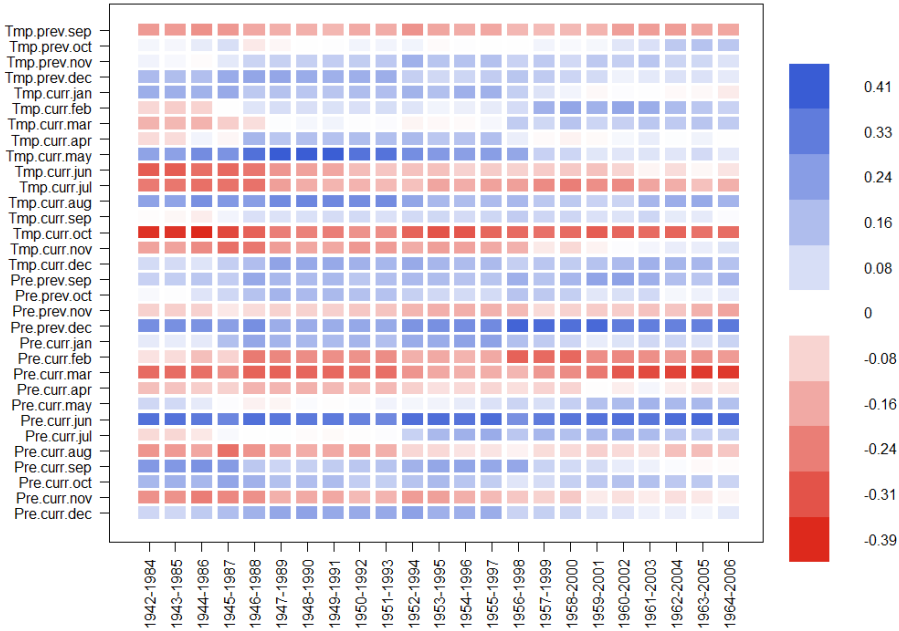
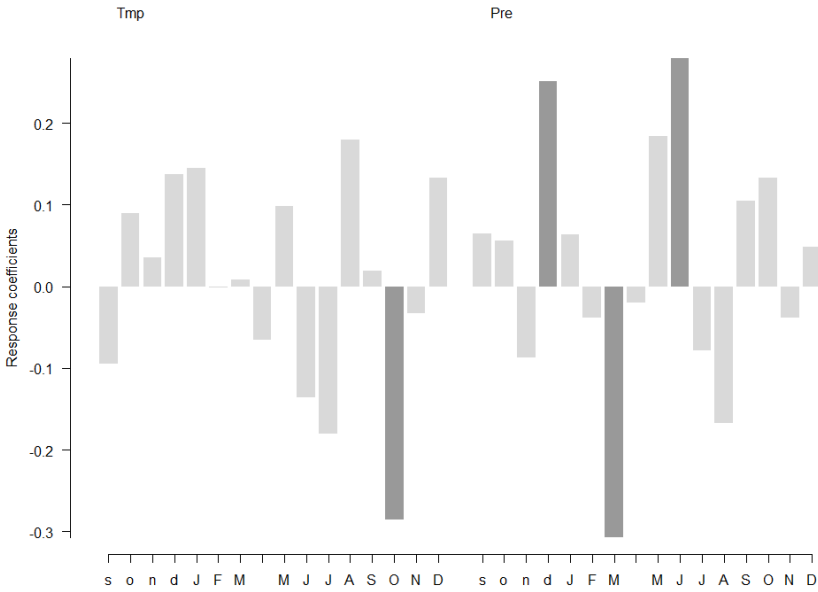
MY27_FASY
Correlación



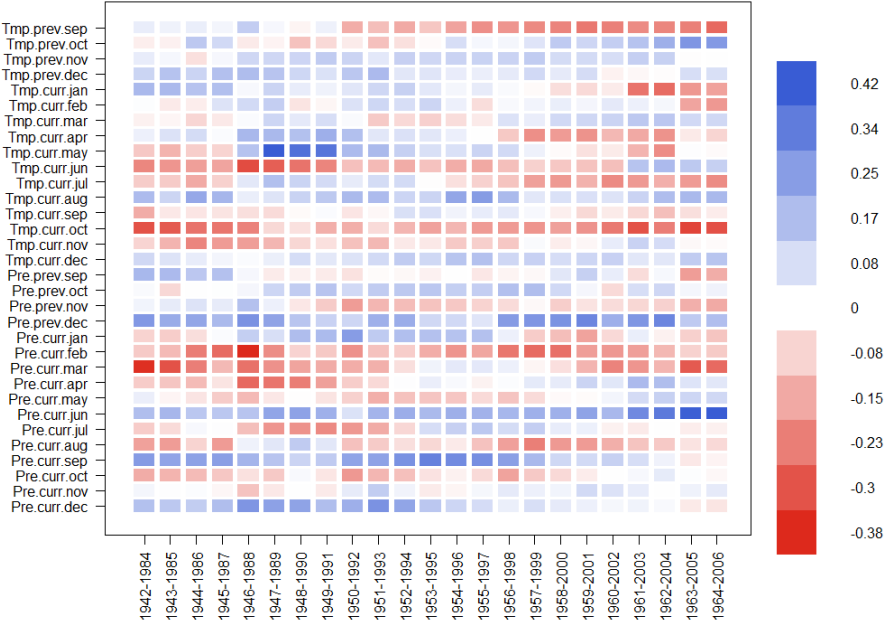
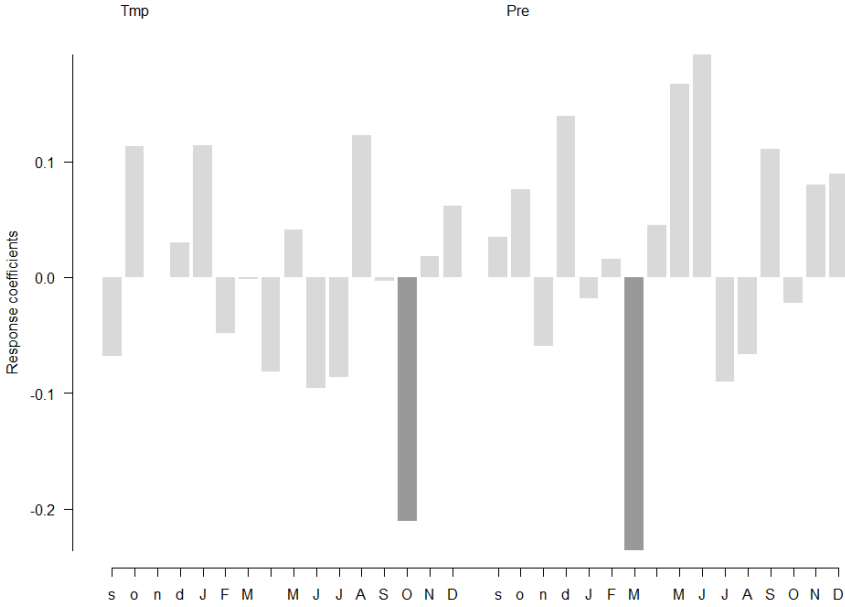
Función respuesta



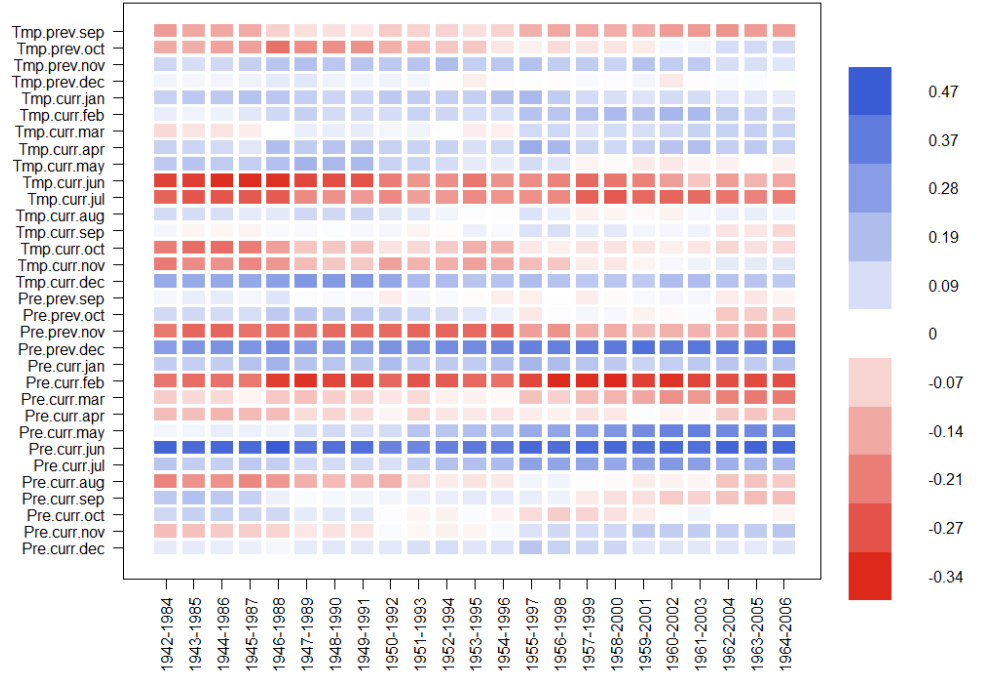
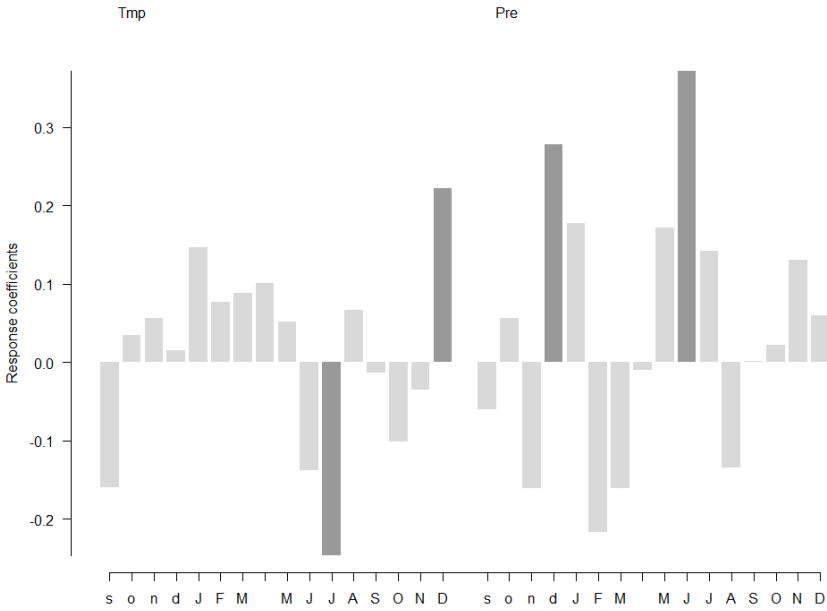
MY28_FASY
Correlación



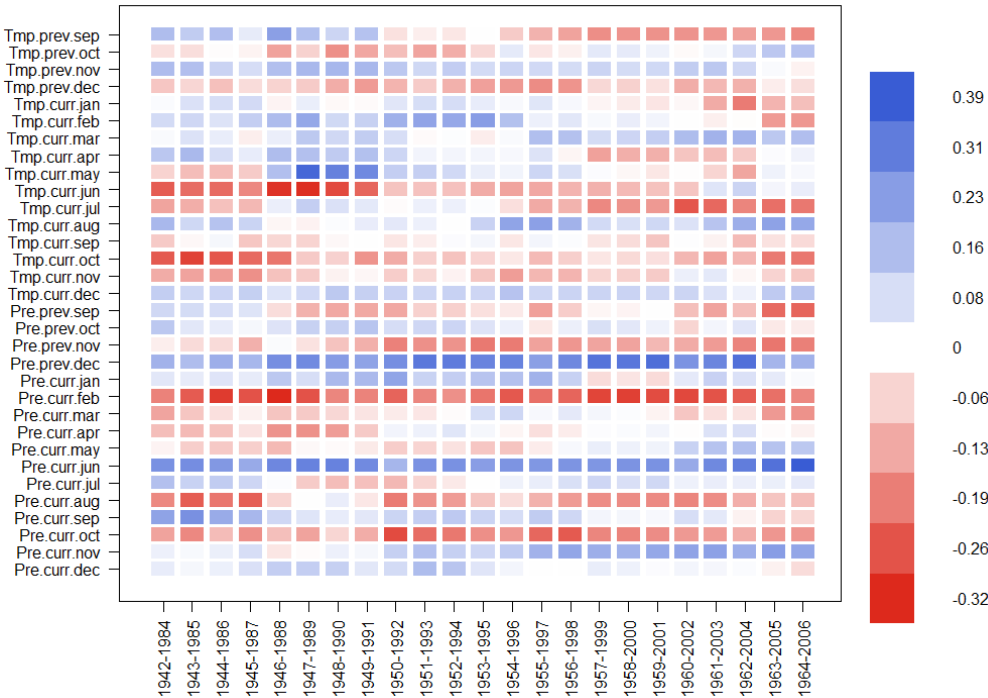
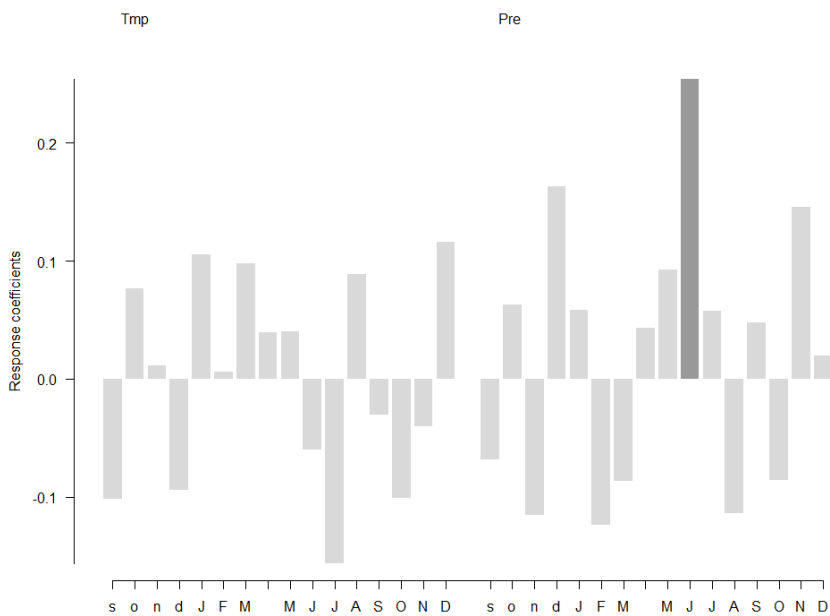
Función respuesta



MY29_FASY
Correlación

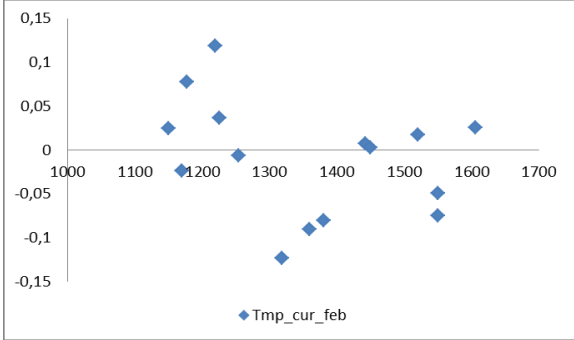
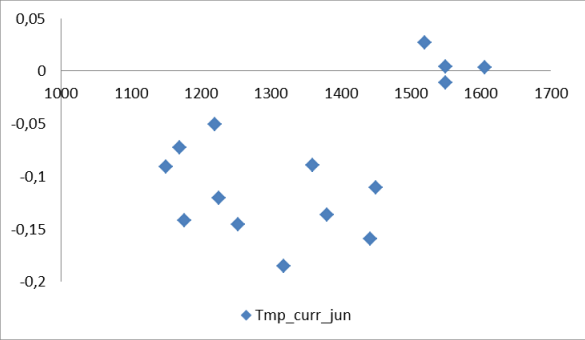
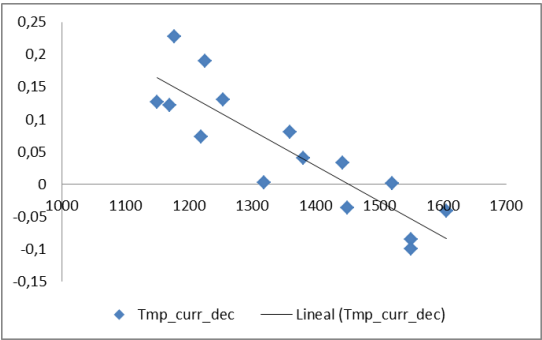
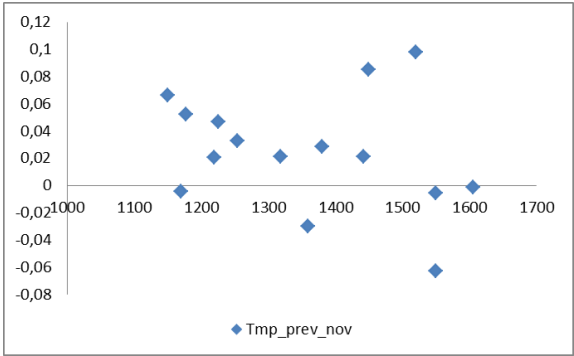
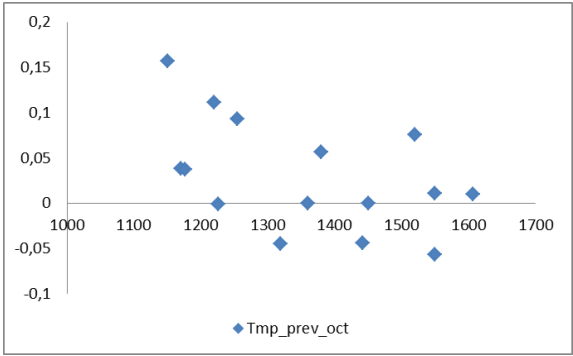
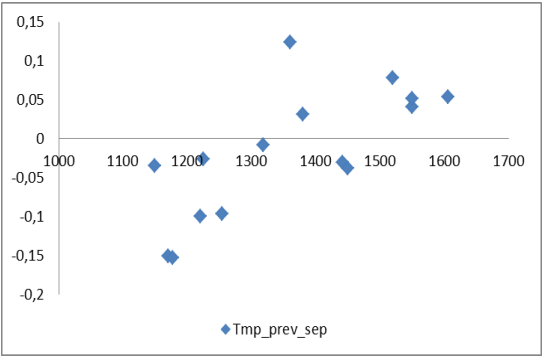


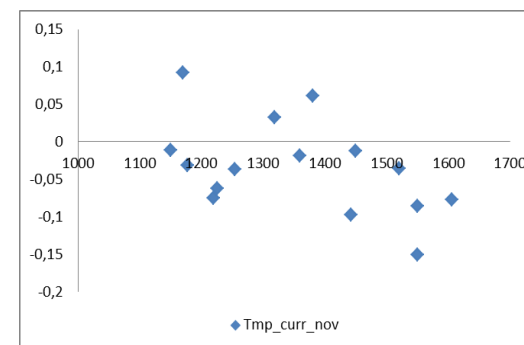
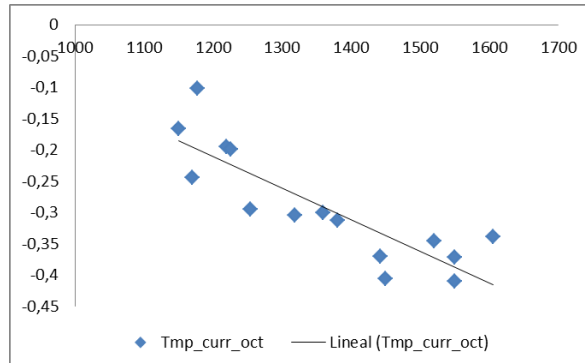
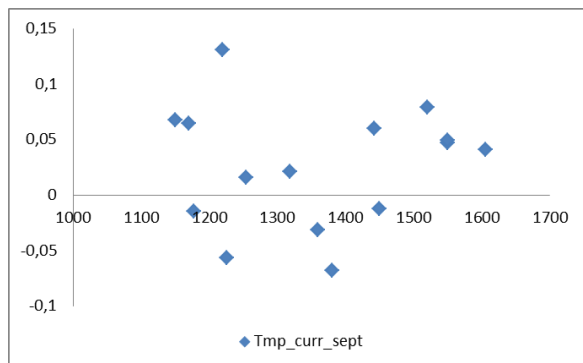
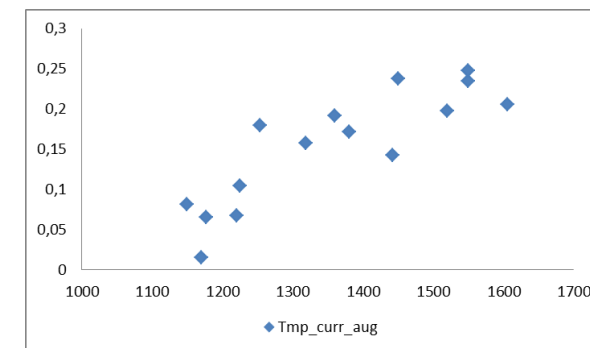
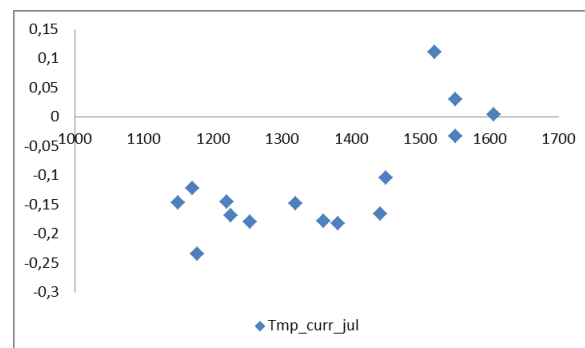
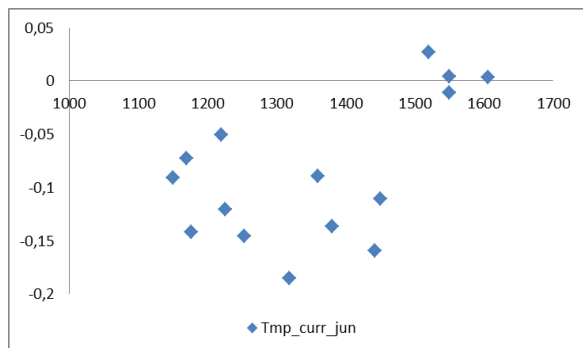
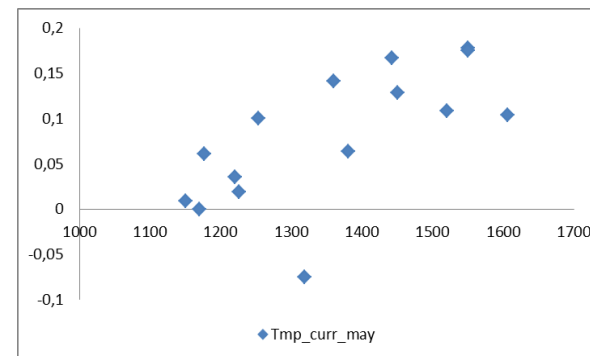
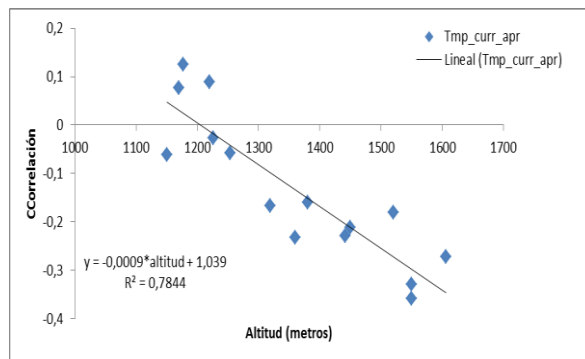
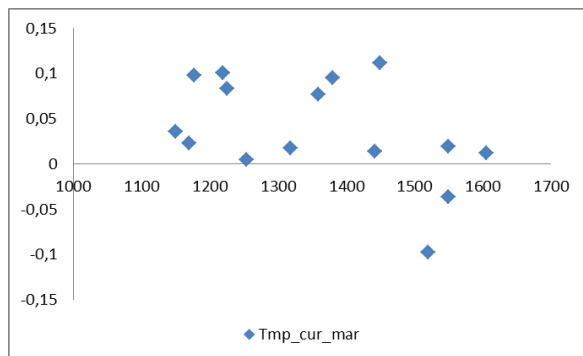
Función respuesta



3. Gráficos de dispersión y significación

3.1. Temperatura





3.2. Precipitaciones

