

Reporte de Modelos — Ensenada

10-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023

Generado: 2025-09-30 17:25

Ensenada — 2010-2011

Días del ciclo: 143

ETc total [mm]: 305.6

ETverde total [mm]: 24.0

ETazul total [mm]: 281.6

Tmax / Tmin [°C]: 31.9 / 0.1

Ensenada — 2010-2011 · Resultados y métricas

[Ensenada 2010-2011] Regresión Lineal ET0 — R^2 : 0.9278 MSE: 0.0968

[Ensenada 2010-2011] Random Forest ET0 — R^2 : 0.9225 MSE: 0.1040

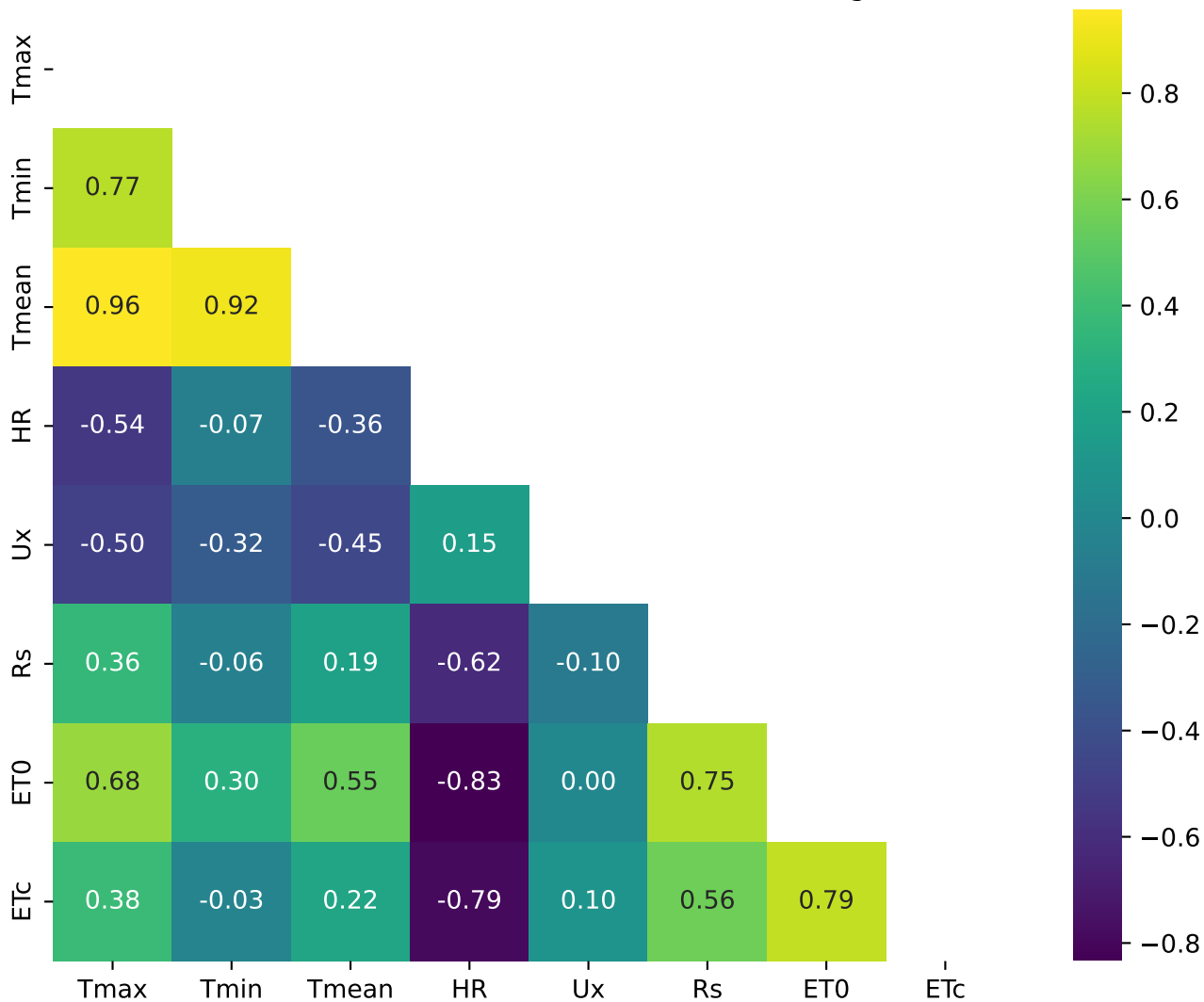
Importancias: {'Tmax': 0.15508749230847366, 'Tmin': 0.034865586001813526, 'HR': 0.6066984012529842, 'Ux': 0.06472839080403864, 'Rs': 0.13862012963269005}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 14.703030 | 8.484242 | 85.314242 | 3.156364 | 8.654545 | 1.436251 | 1.117481 |
| 1 | 19.122105 | 7.044737 | 38.711579 | 4.168421 | 16.161053 | 4.325892 | 3.766532 |
| 2 | 29.069091 | 16.582727 | 52.580000 | 1.350909 | 13.863636 | 3.641494 | 1.456597 |
| 3 | 16.952368 | 6.538947 | 69.197368 | 2.223947 | 14.640526 | 2.336252 | 1.771715 |
| 4 | 23.034524 | 9.709524 | 45.879048 | 1.813810 | 15.410952 | 3.387944 | 2.710897 |

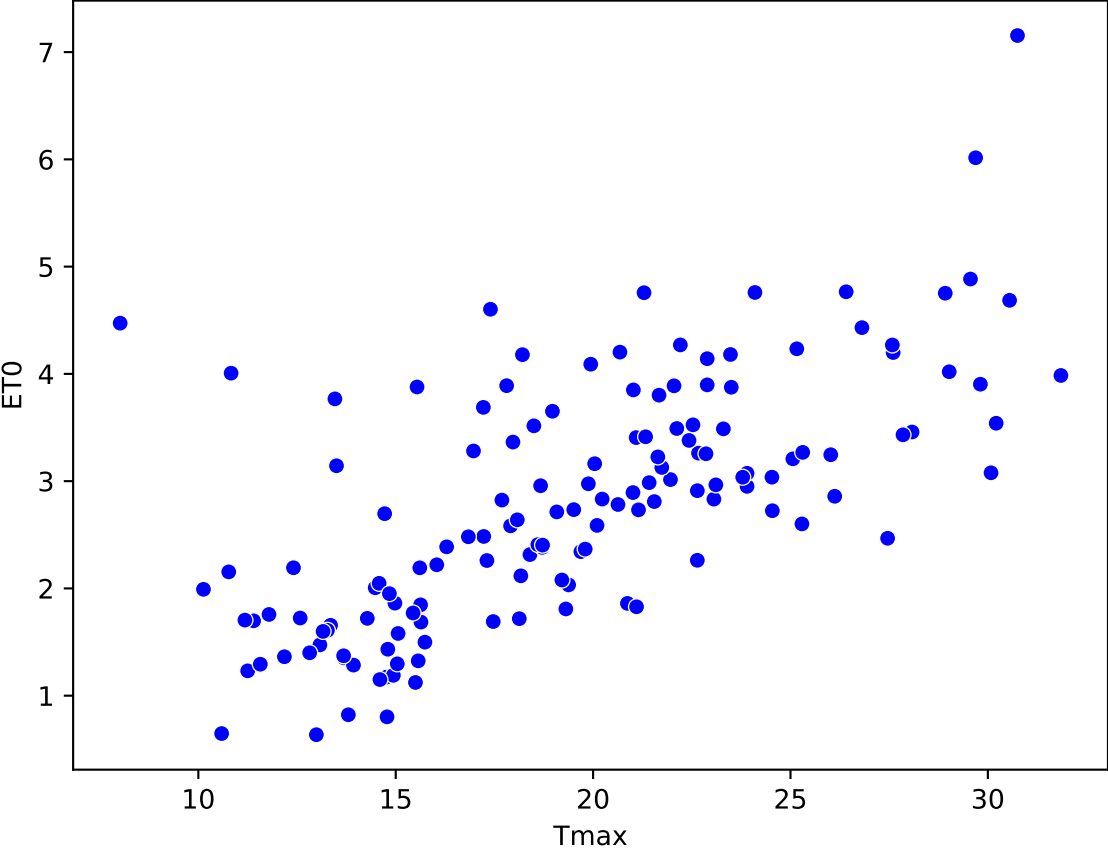
Ensenada — 2010-2011

Matriz de Correlación entre Variables Meteorológicas

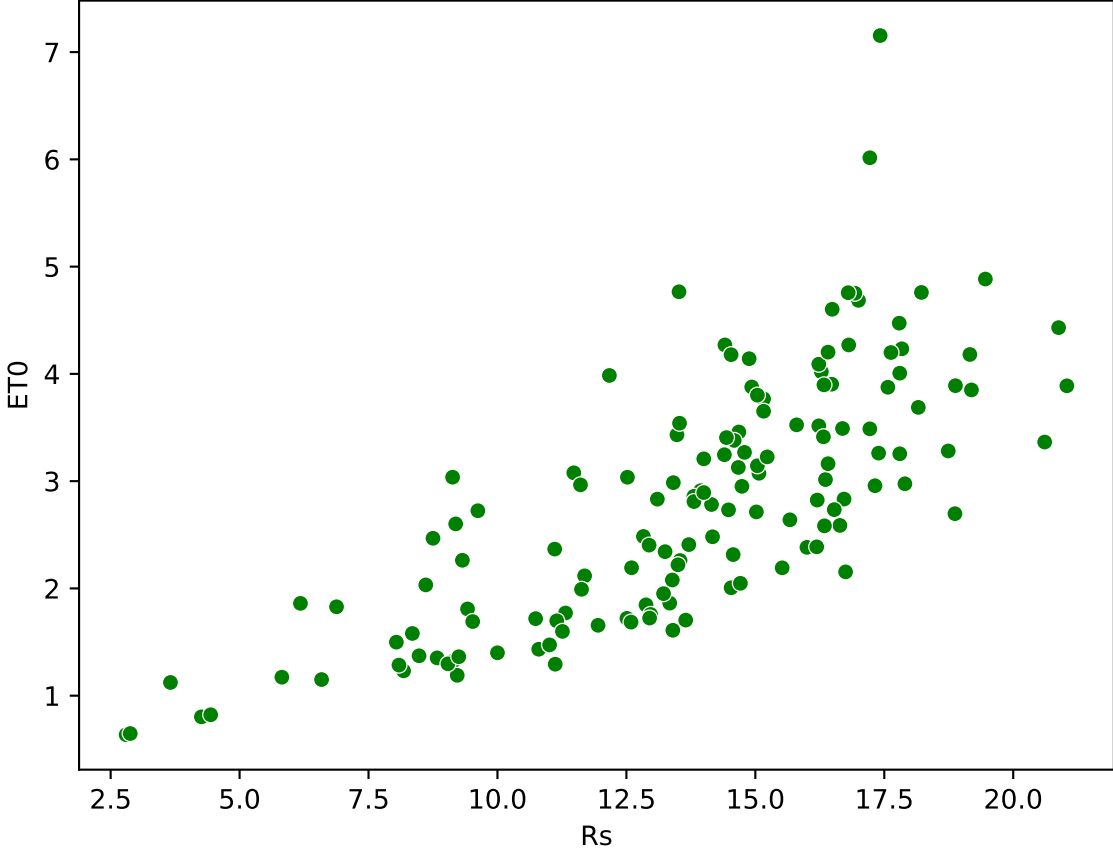


Dispersión — Ensenada (2010-2011)

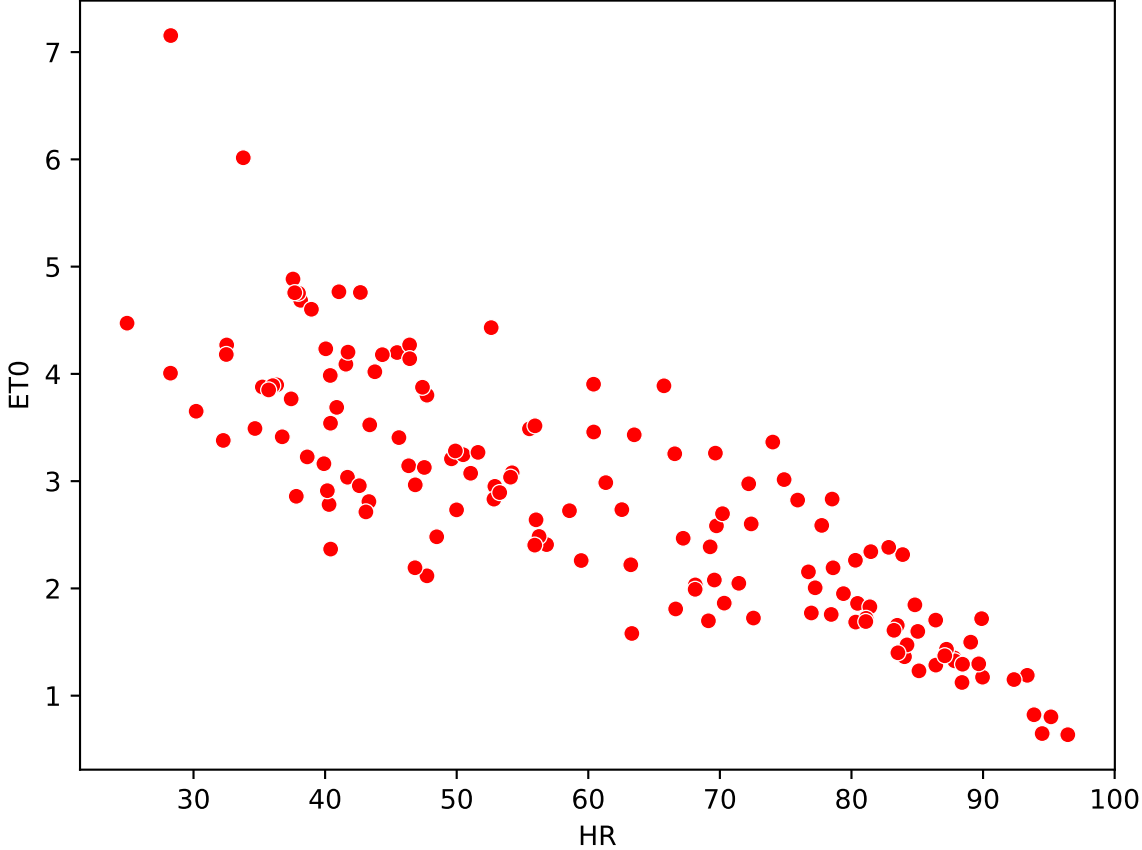
Tmax vs ET0



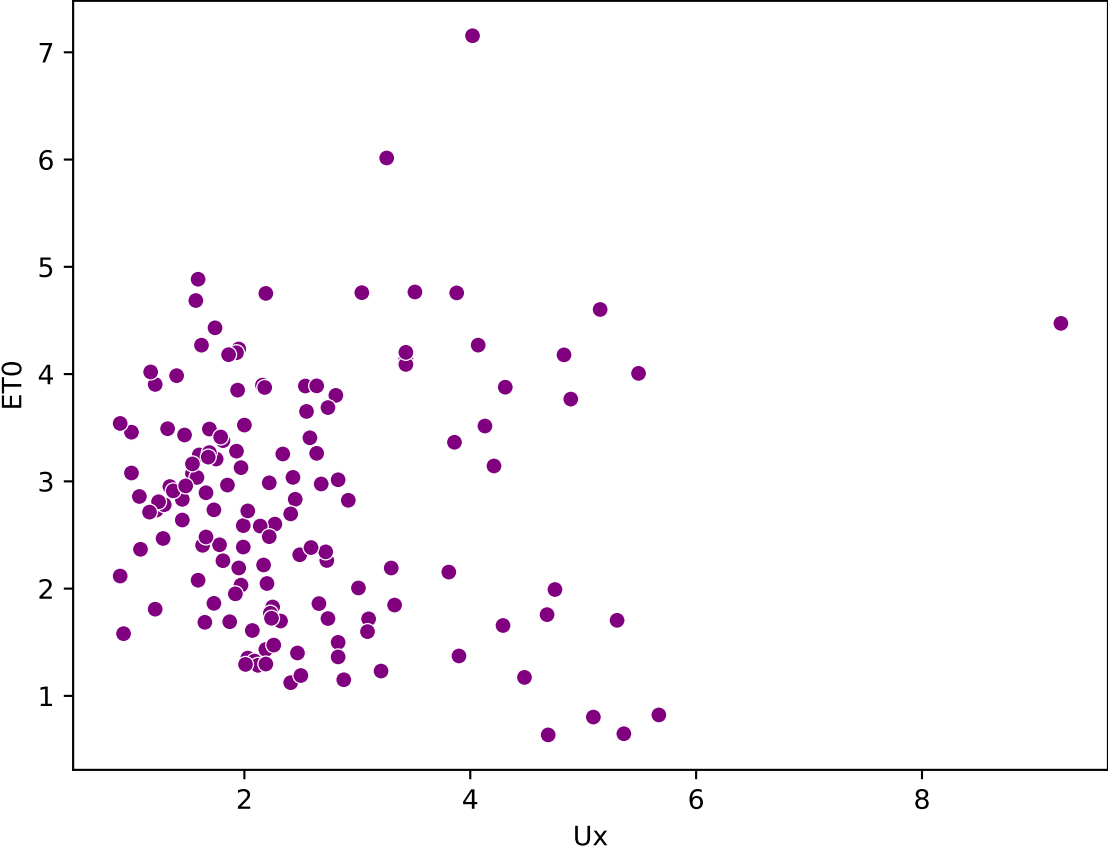
Rs vs ET0



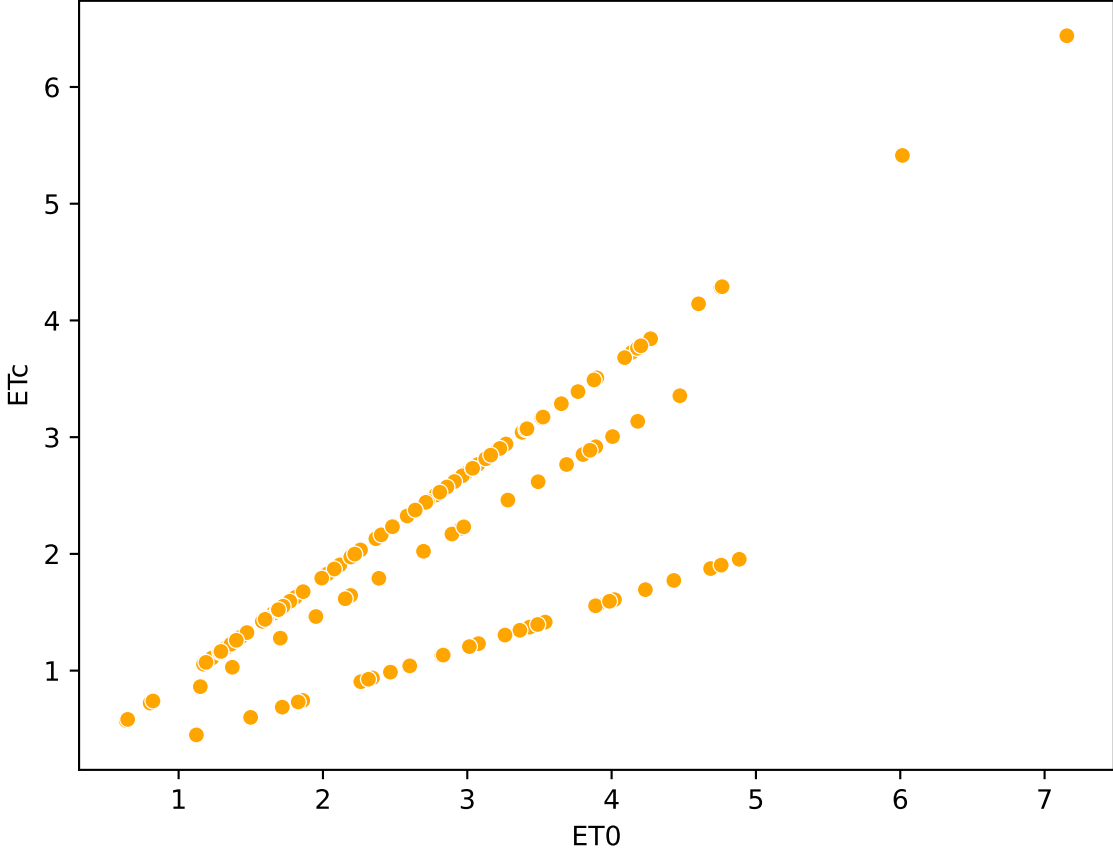
HR vs ET0



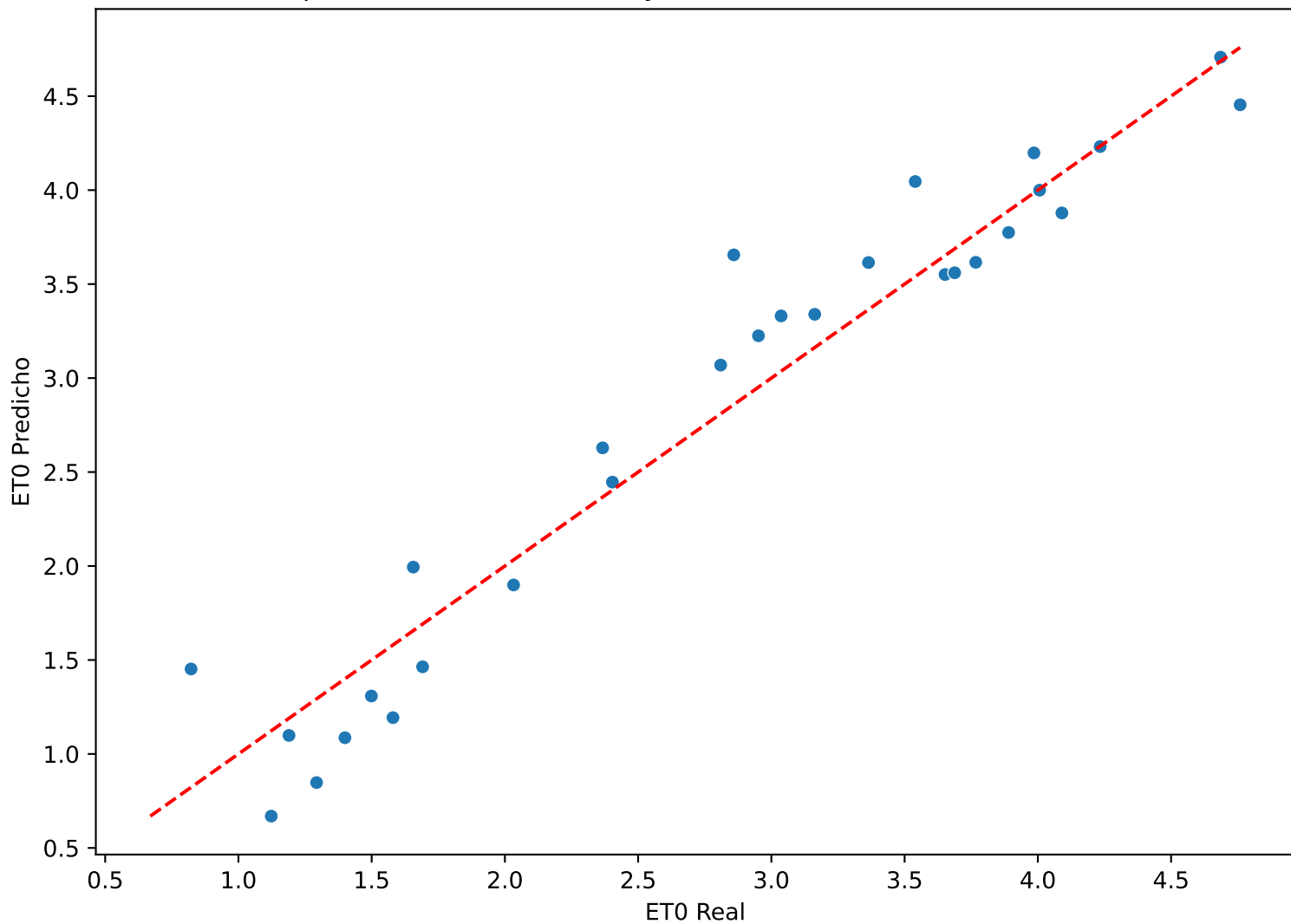
Ux vs ET0



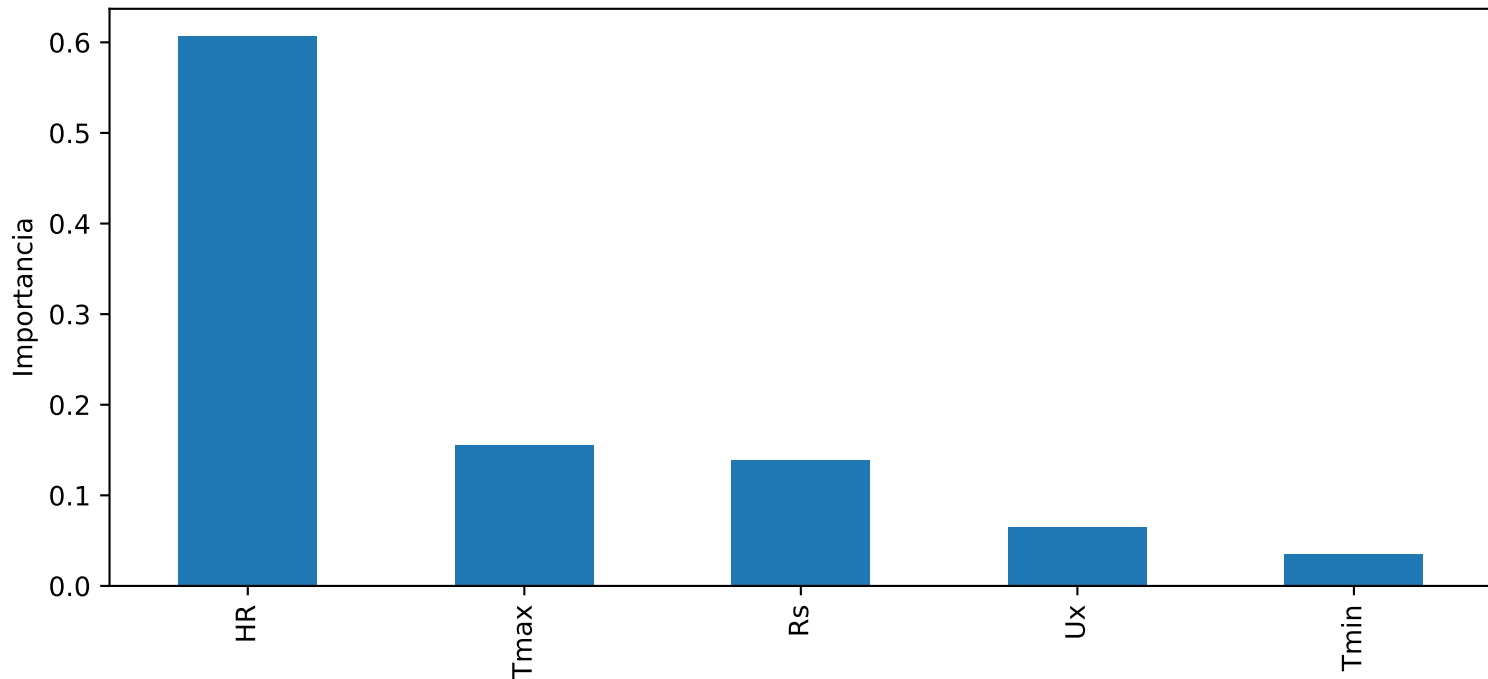
ET0 vs ETc



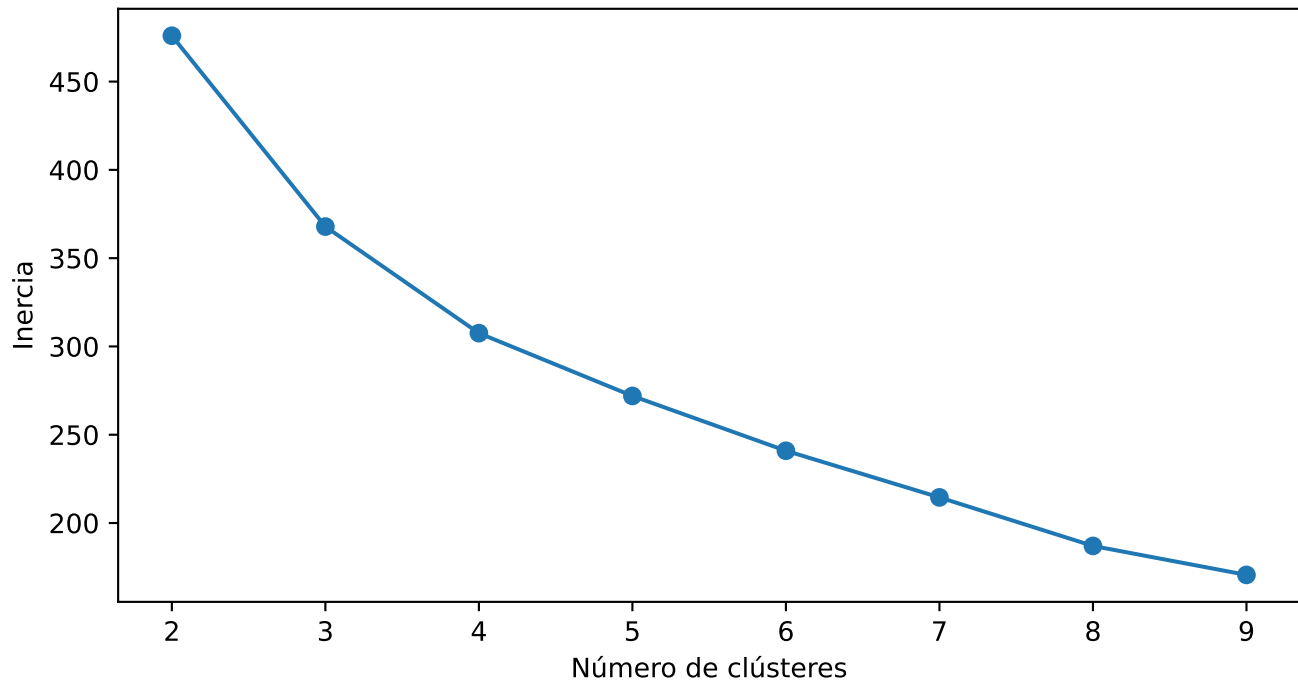
Comparación entre ET0 Real y Predicho — Ensenada (2010-2011)



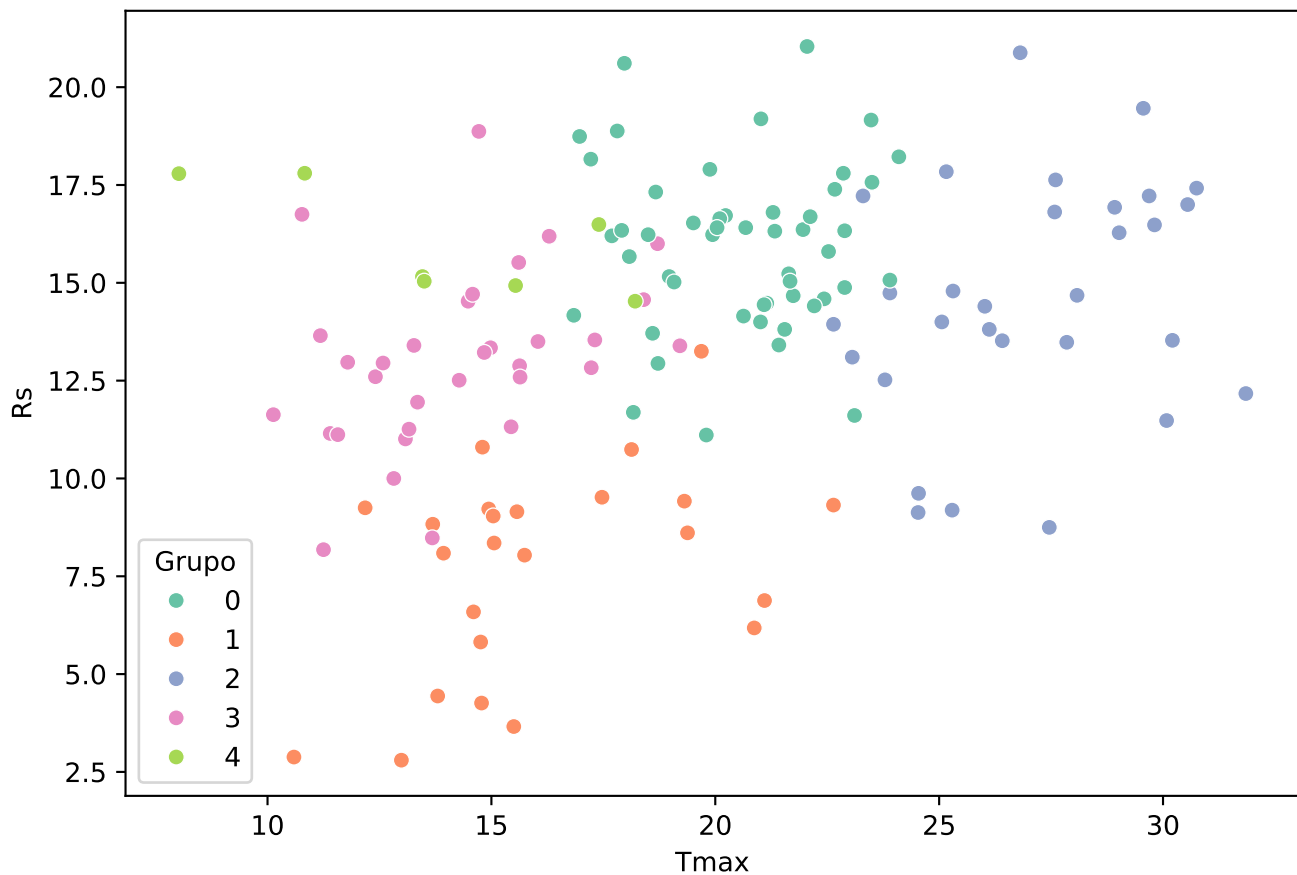
Importancia de variables (RF) — Ensenada (2010-2011)



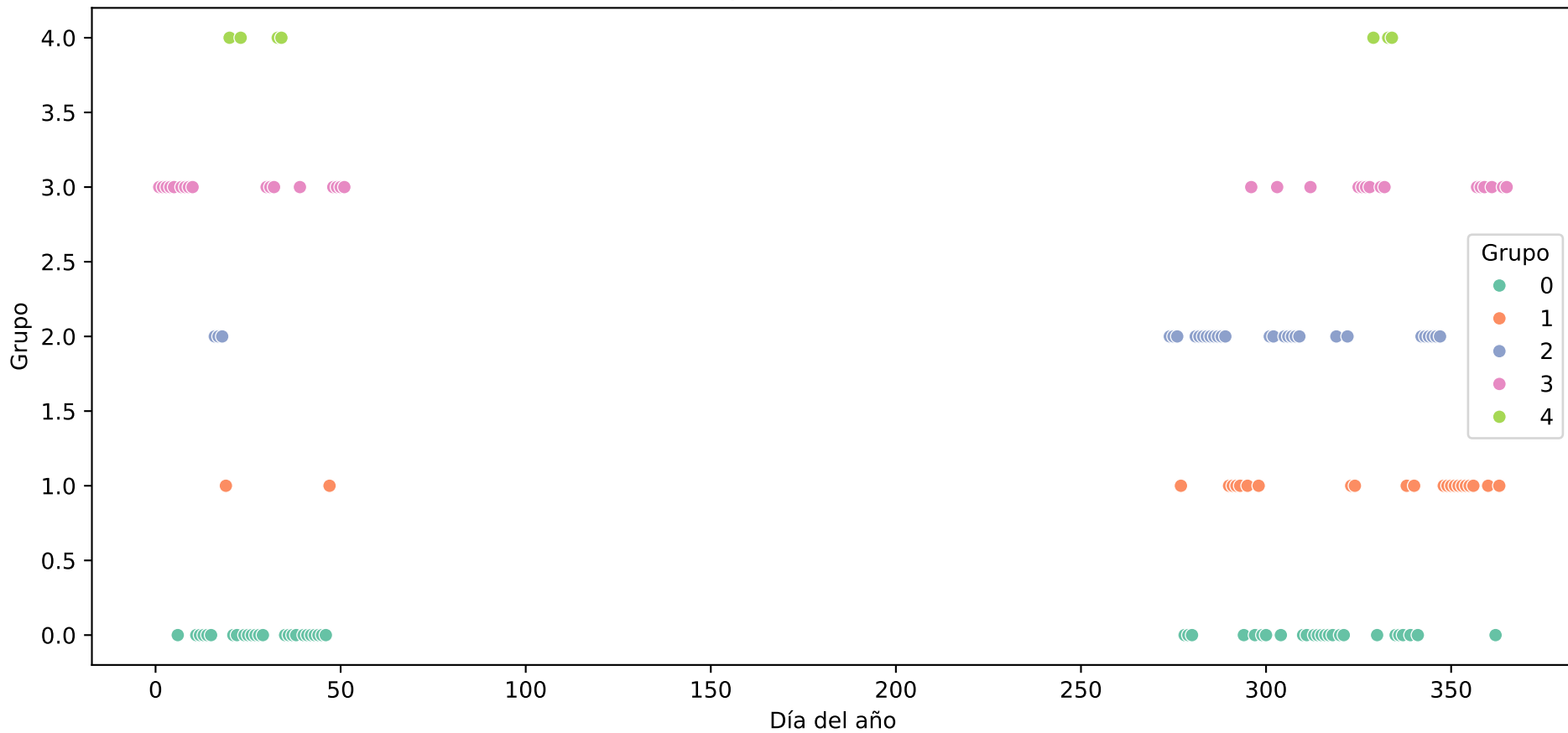
Método del codo



Clasificación de días climáticos — Ensenada (2010-2011)

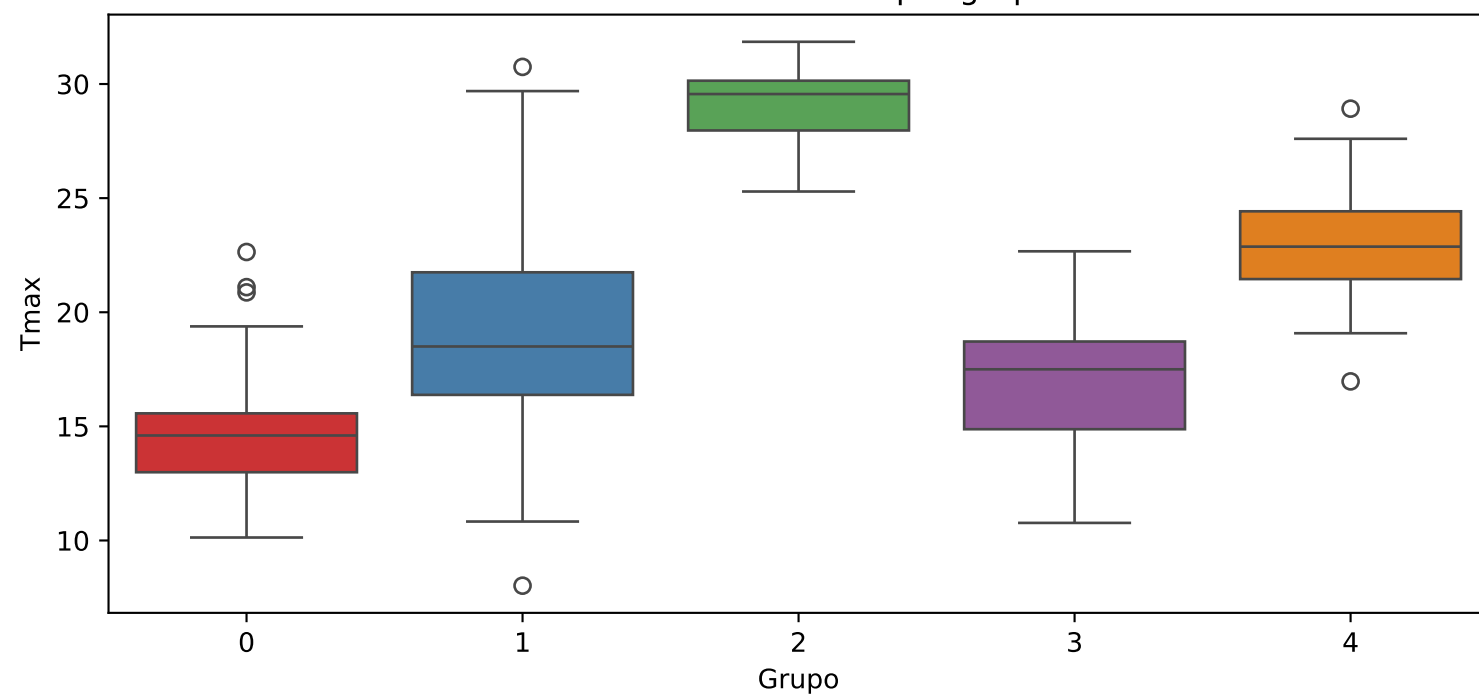


Distribución de días por grupo — Ensenada (2010-2011)

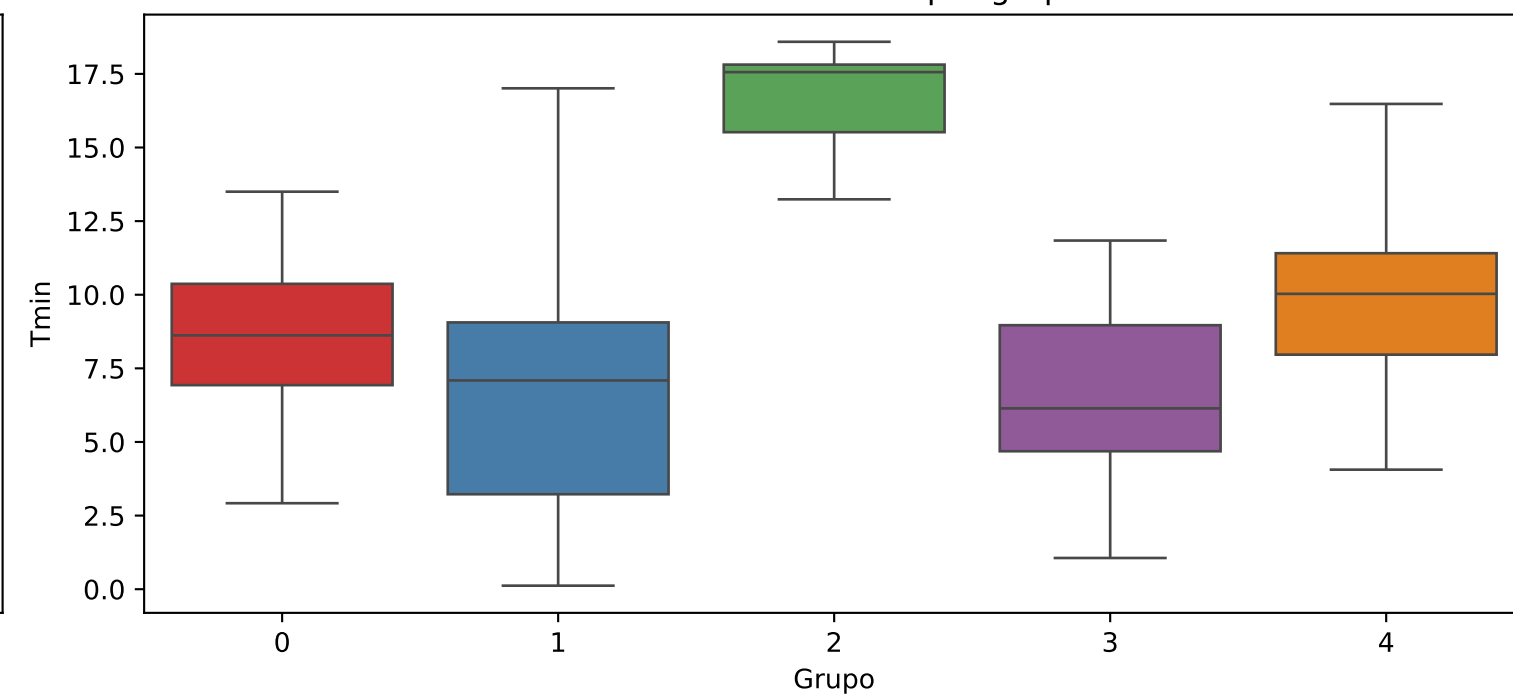


Boxplots por grupo — Ensenada (2010-2011)

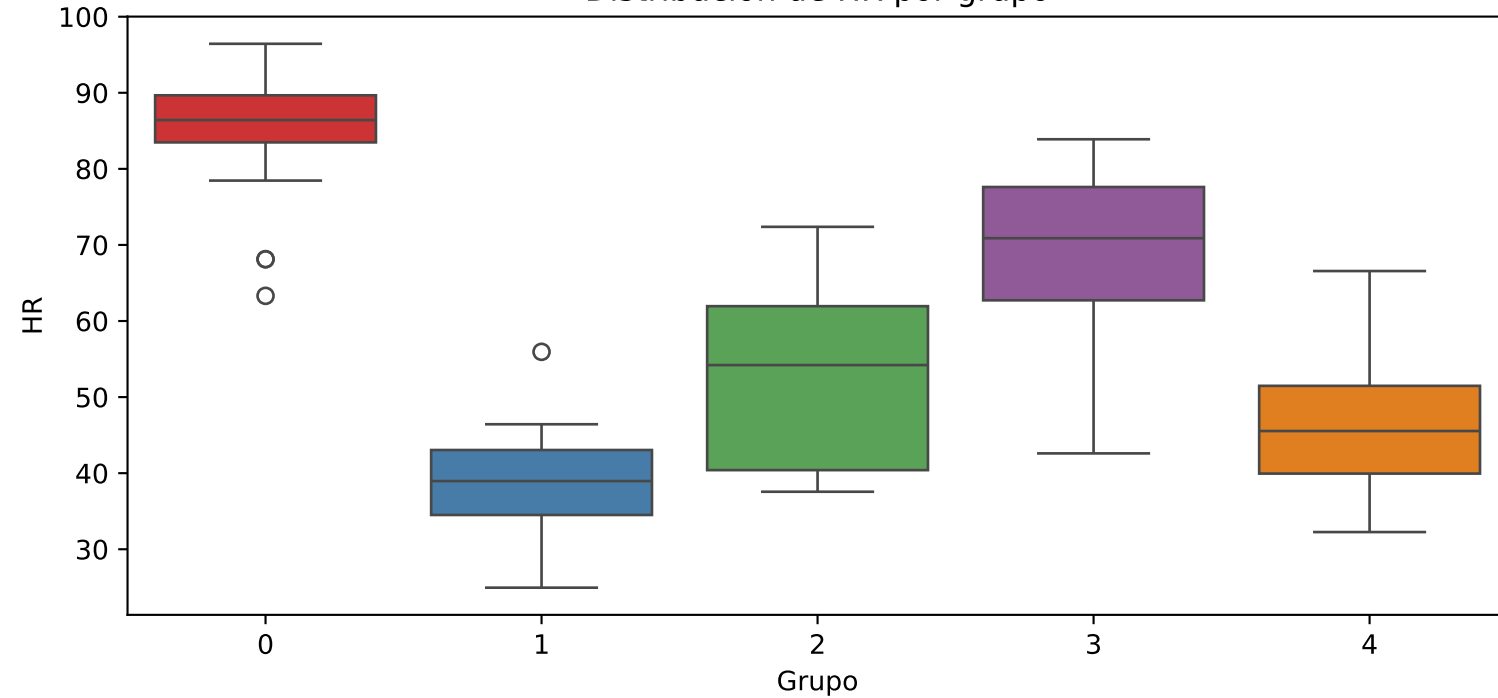
Distribución de Tmax por grupo



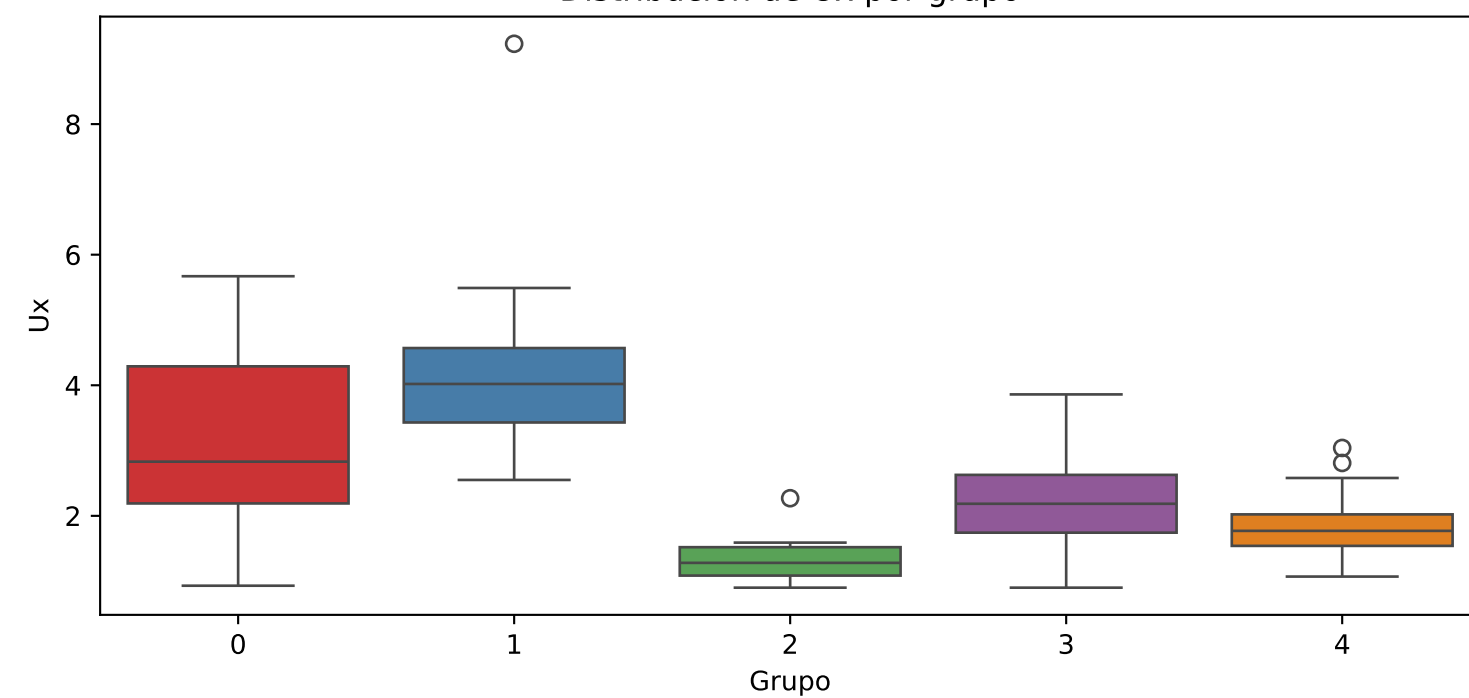
Distribución de Tmin por grupo



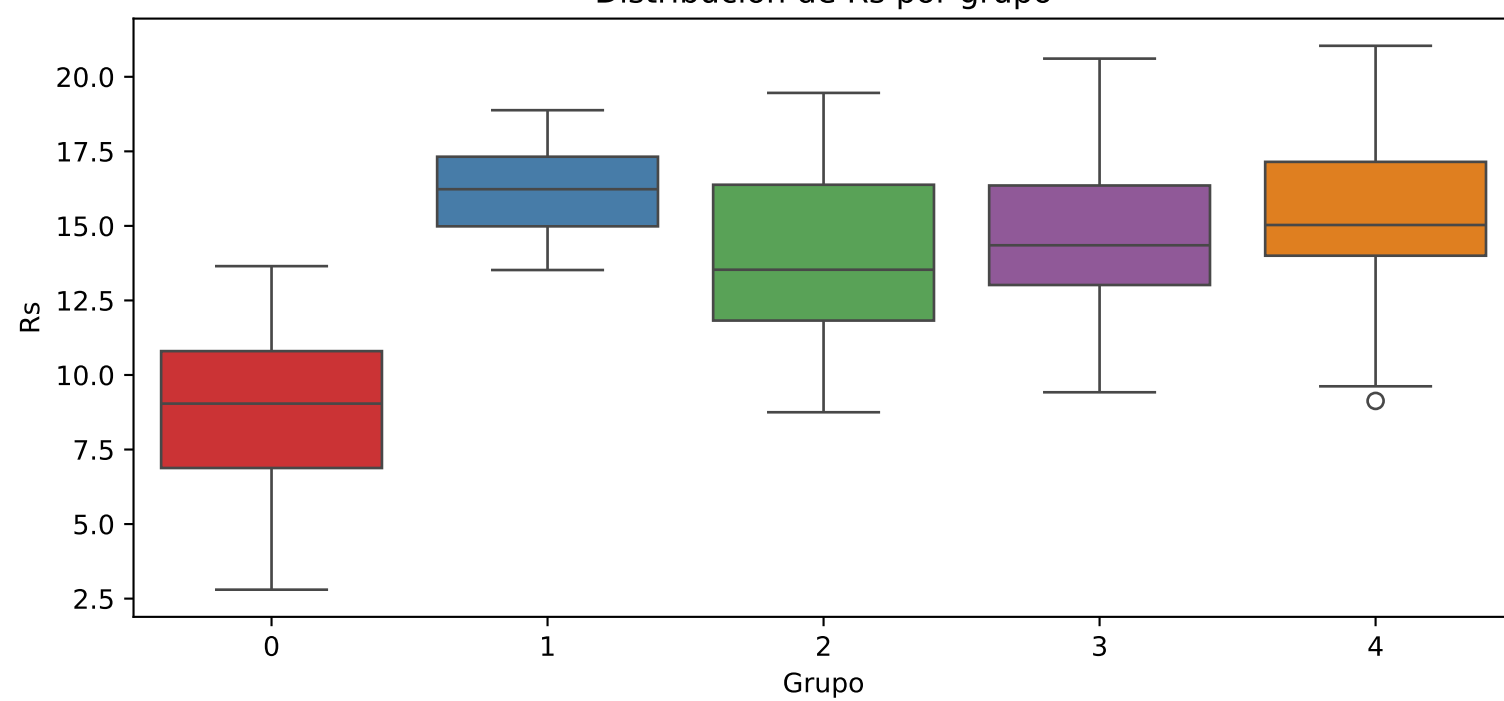
Distribución de HR por grupo



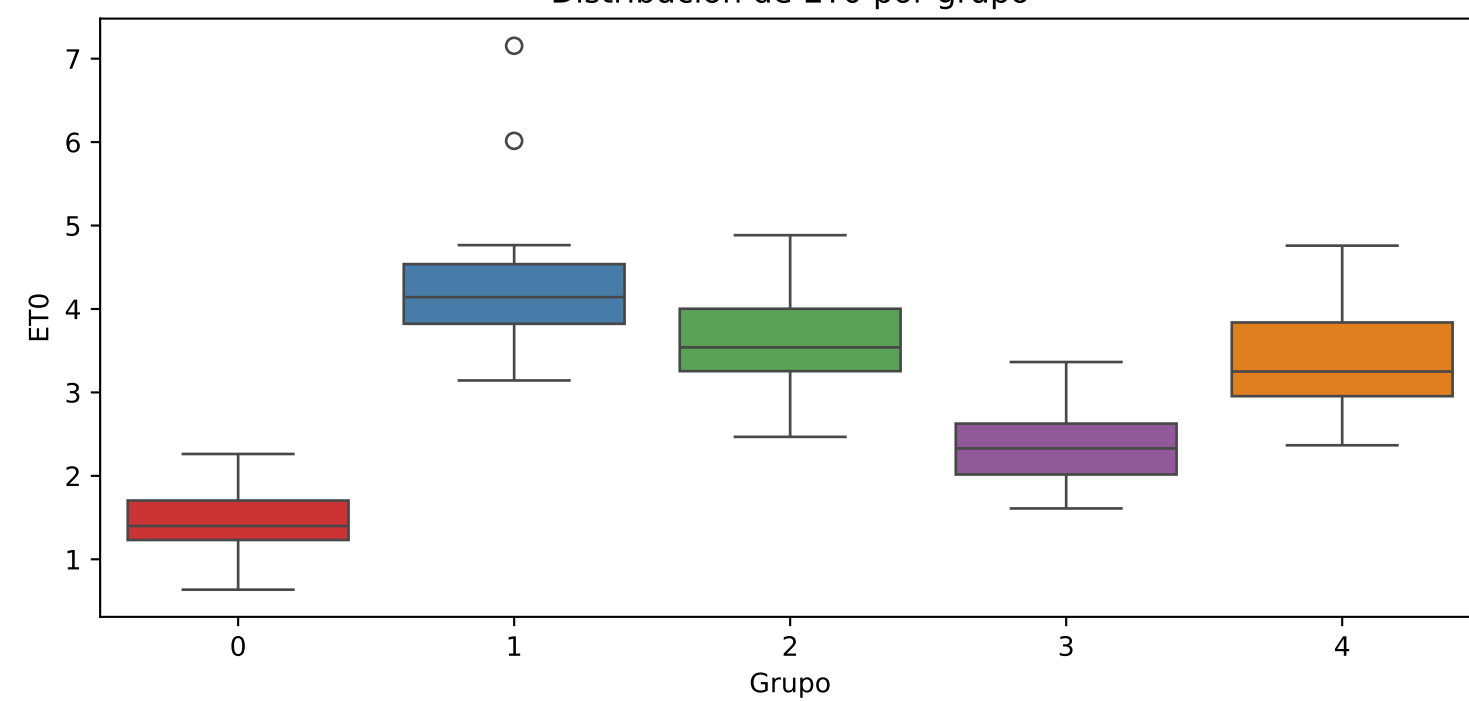
Distribución de Ux por grupo



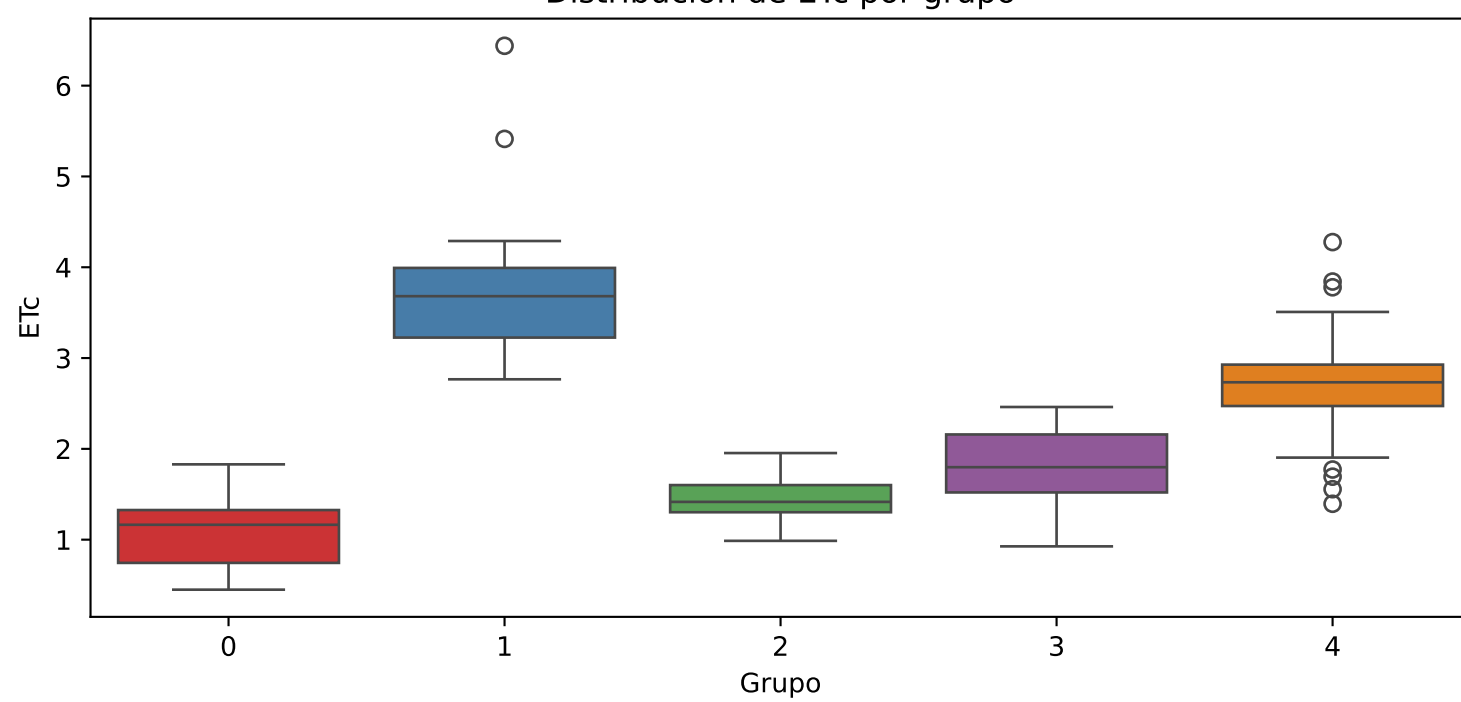
Distribución de Rs por grupo



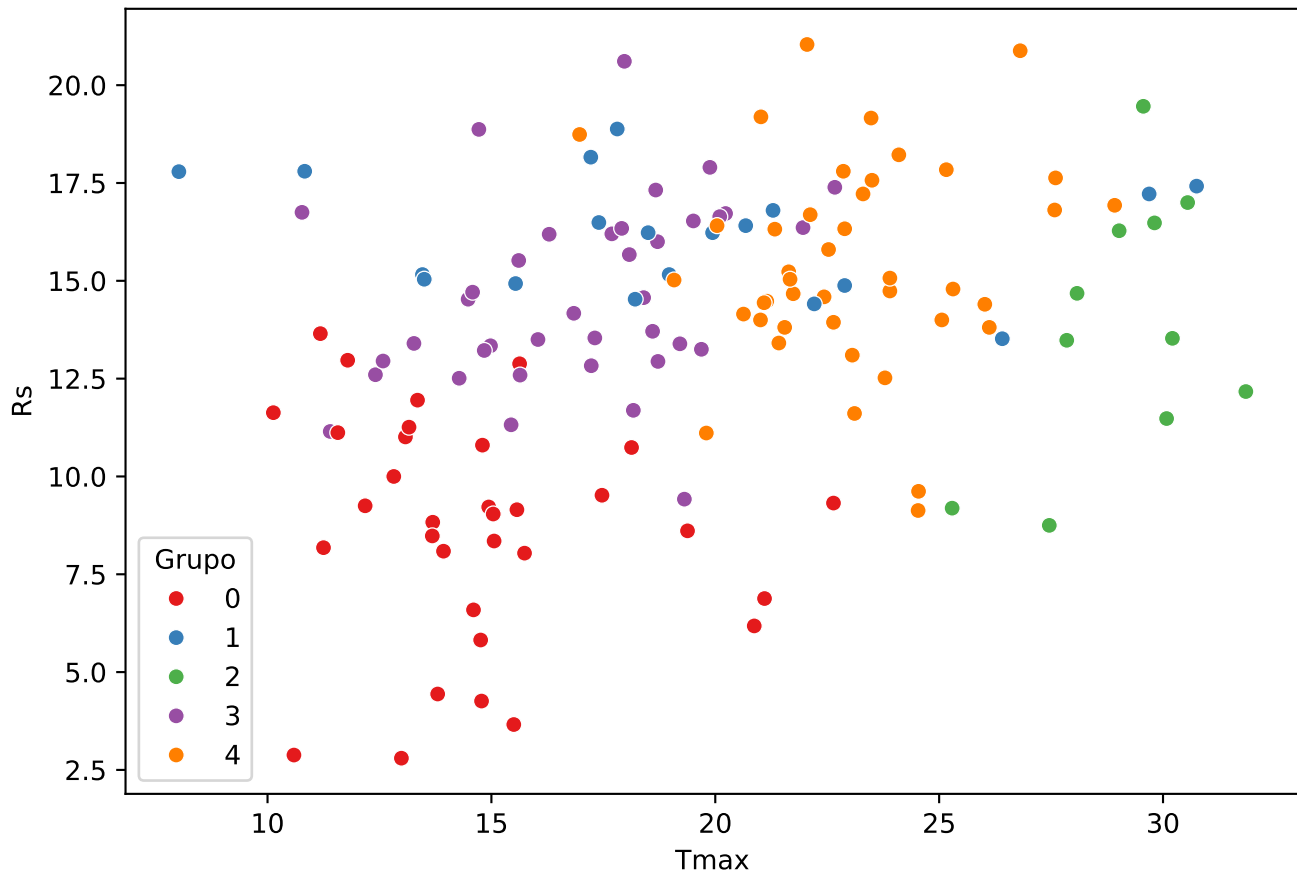
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2010-2011)



Ensenada — 2011-2012

Días del ciclo: 143

ETc total [mm]: 313.0

ETverde total [mm]: 27.2

ETazul total [mm]: 285.8

Tmax / Tmin [°C]: 34.4 / 2.5

Ensenada — 2011-2012 · Resultados y métricas

[Ensenada 2011-2012] Regresión Lineal ET0 — R^2 : 0.9492 MSE: 0.0777

[Ensenada 2011-2012] Random Forest ET0 — R^2 : 0.8775 MSE: 0.1873

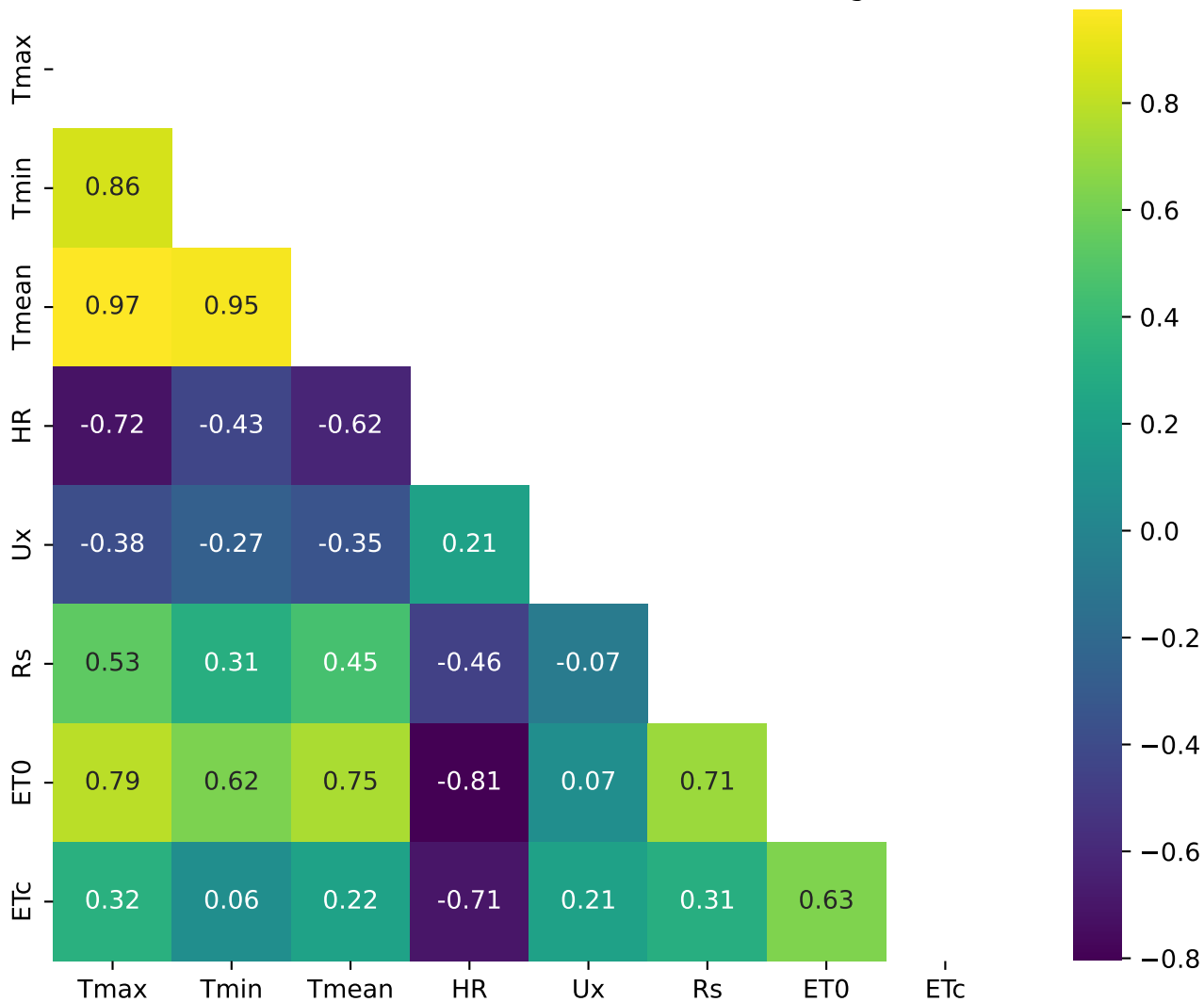
Importancias: {'Tmax': 0.32071104055790806, 'Tmin': 0.0317552501068147, 'HR': 0.4350033437823155, 'Ux': 0.06700810347074544, 'Rs': 0.14552226208221633}

Estadísticas descriptivas por grupo (medias):

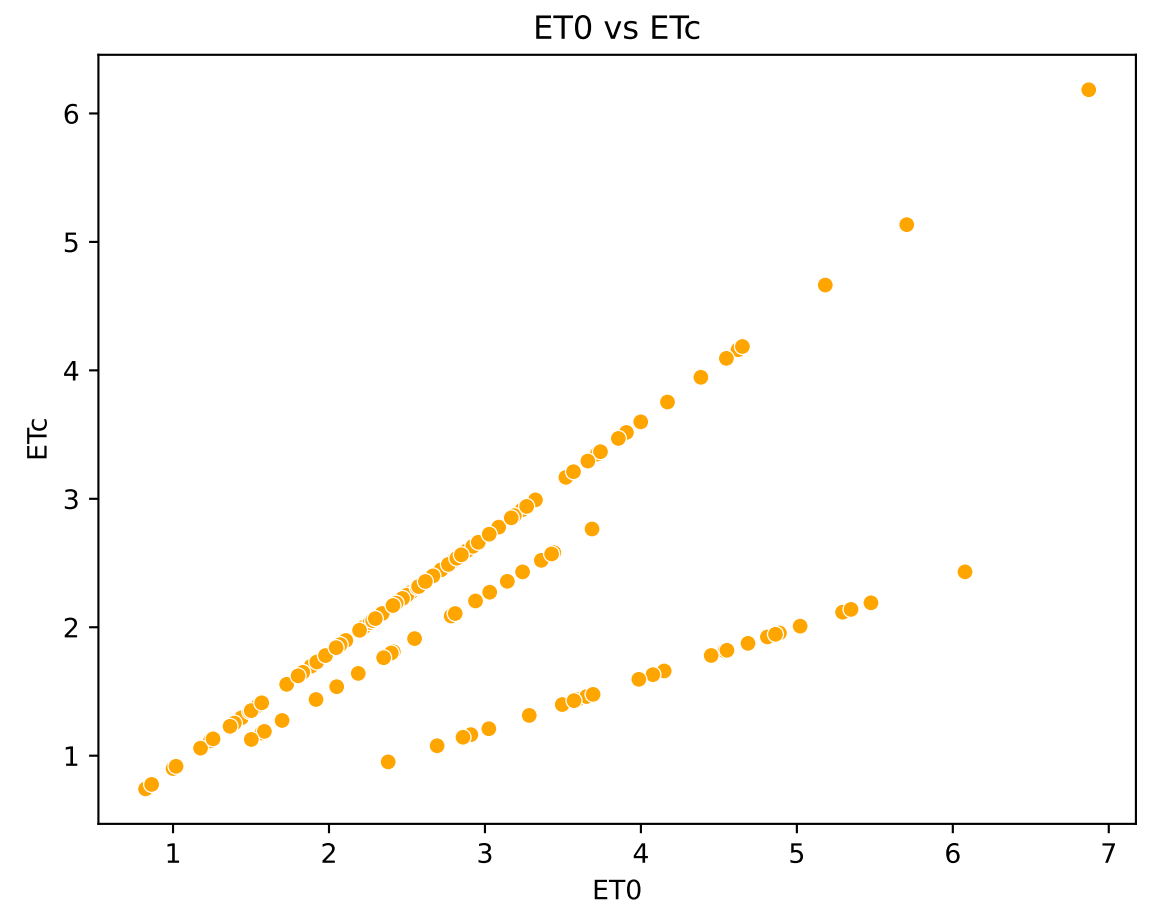
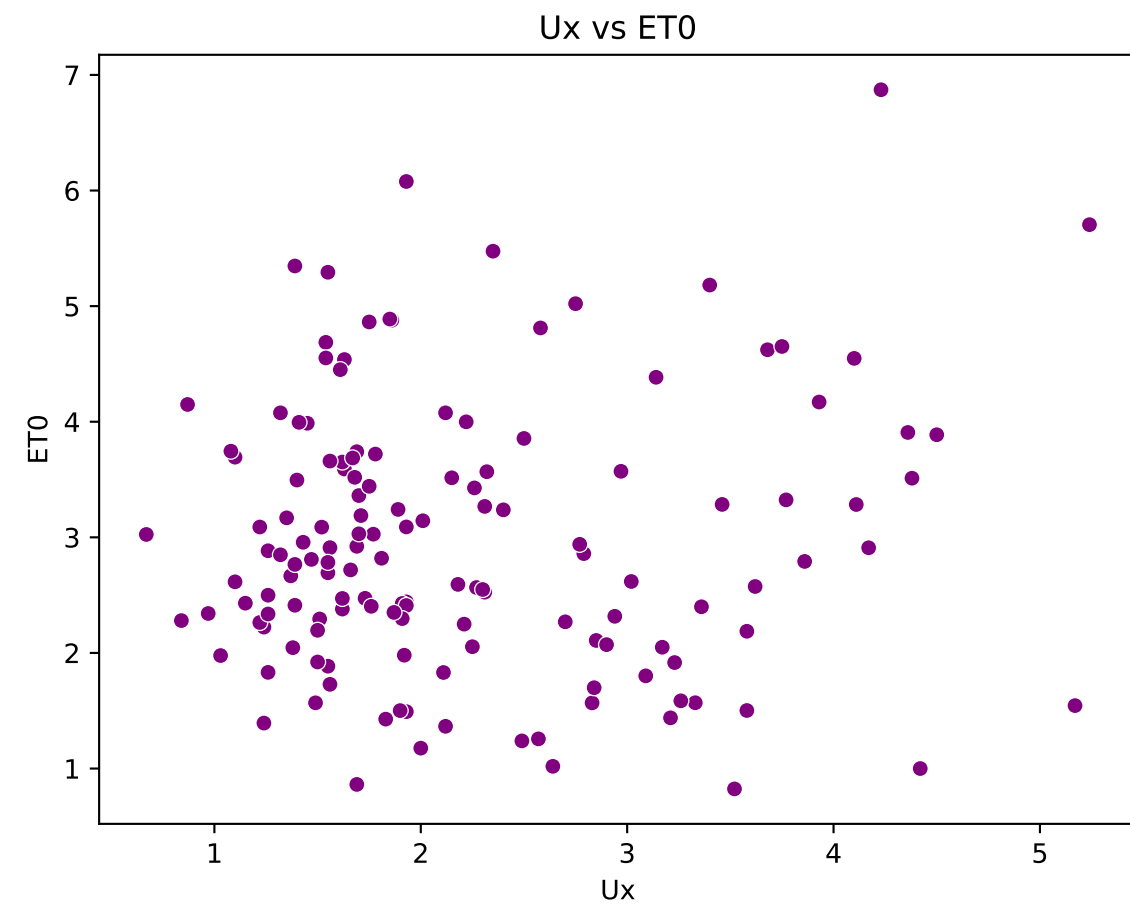
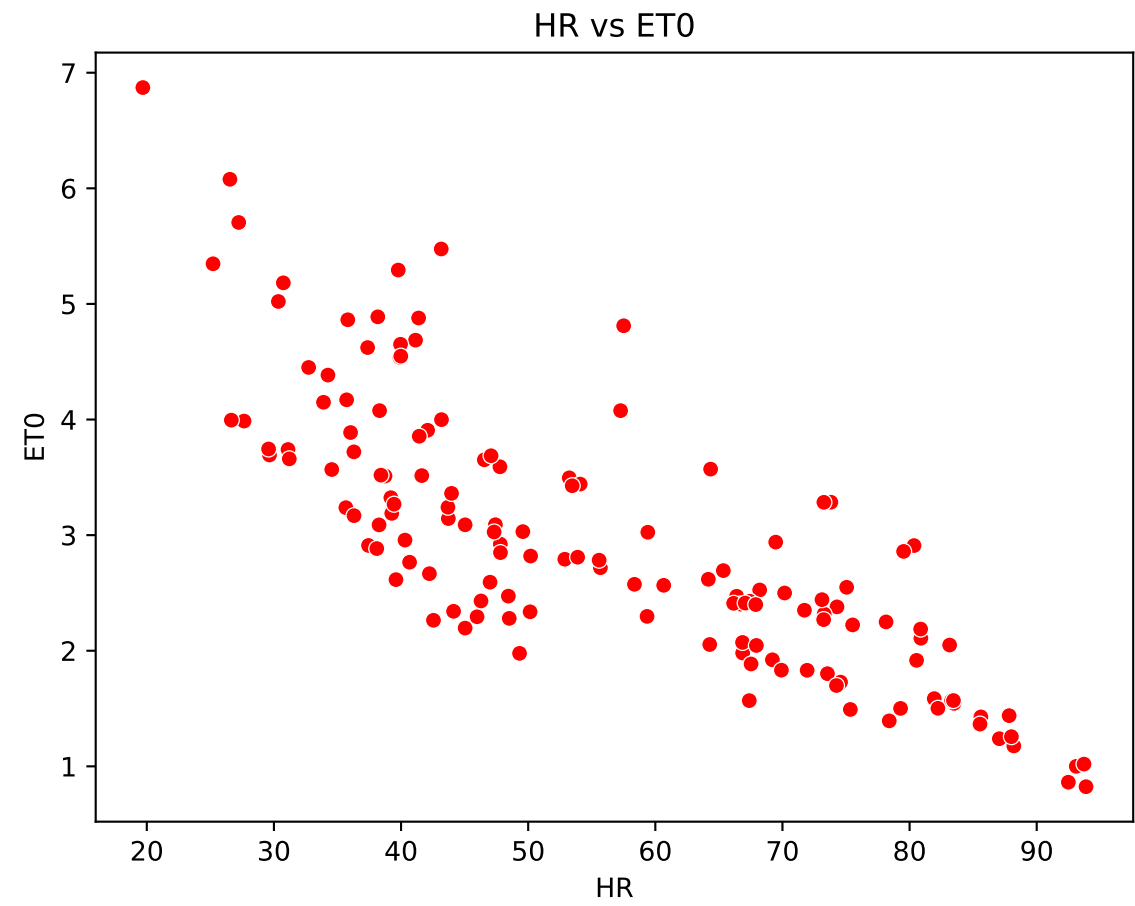
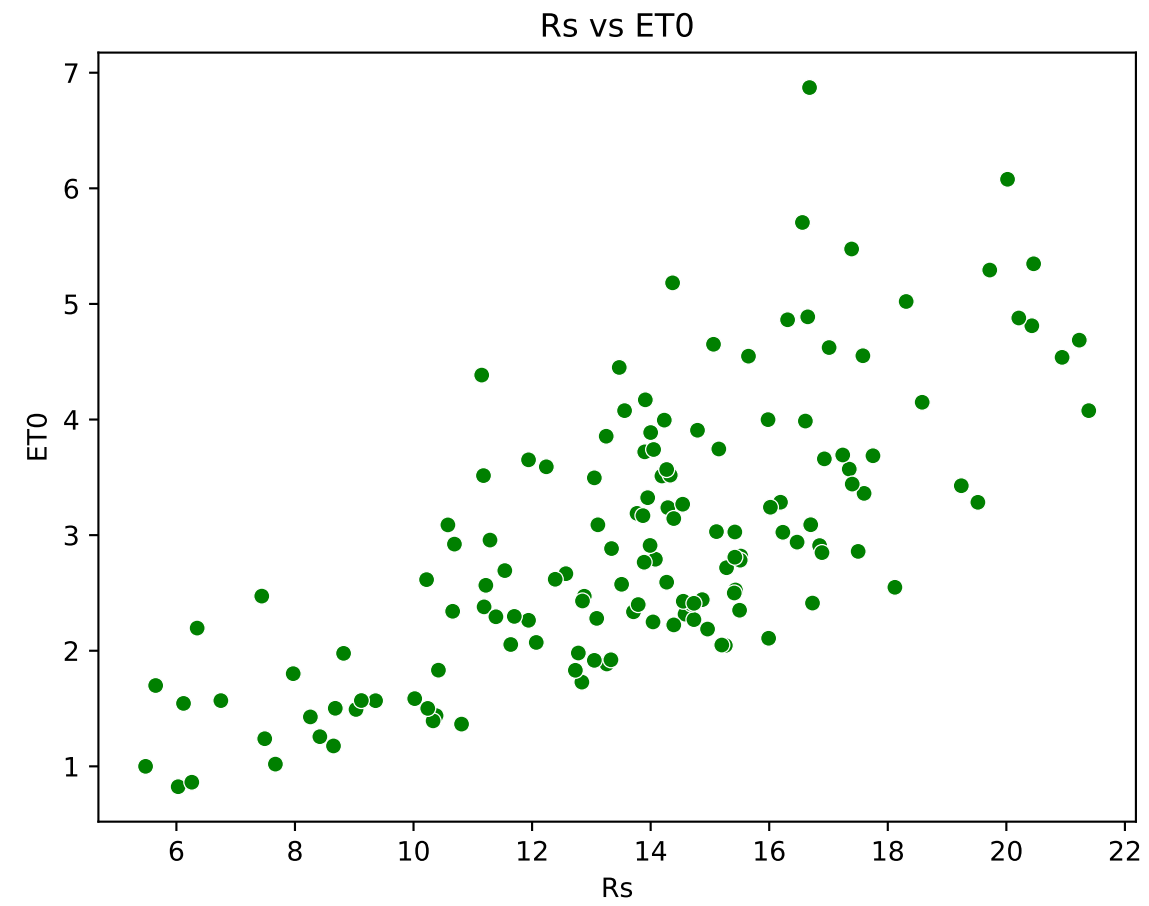
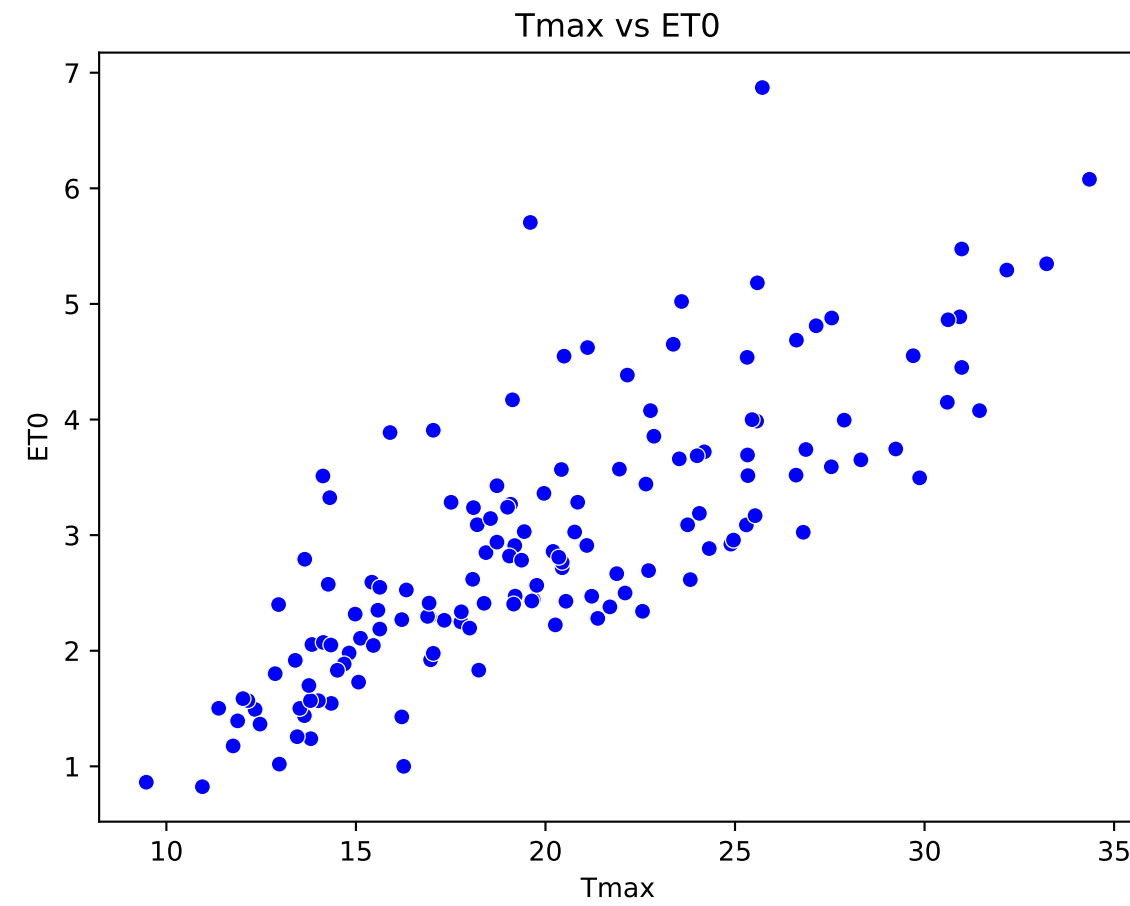
| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 28.771304 | 15.448261 | 38.360435 | 1.666522 | 17.248261 | 4.493224 | 1.965551 |
| 1 | 13.003810 | 6.926667 | 83.717619 | 2.721429 | 8.224762 | 1.373092 | 1.190381 |
| 2 | 21.566042 | 8.987917 | 45.841458 | 1.604583 | 13.595417 | 2.962218 | 2.526752 |
| 3 | 16.866410 | 6.709231 | 69.702308 | 2.457692 | 14.613846 | 2.413345 | 1.852041 |
| 4 | 19.879167 | 7.808333 | 35.083333 | 4.040000 | 14.776667 | 4.563805 | 4.107425 |

Ensenada — 2011-2012

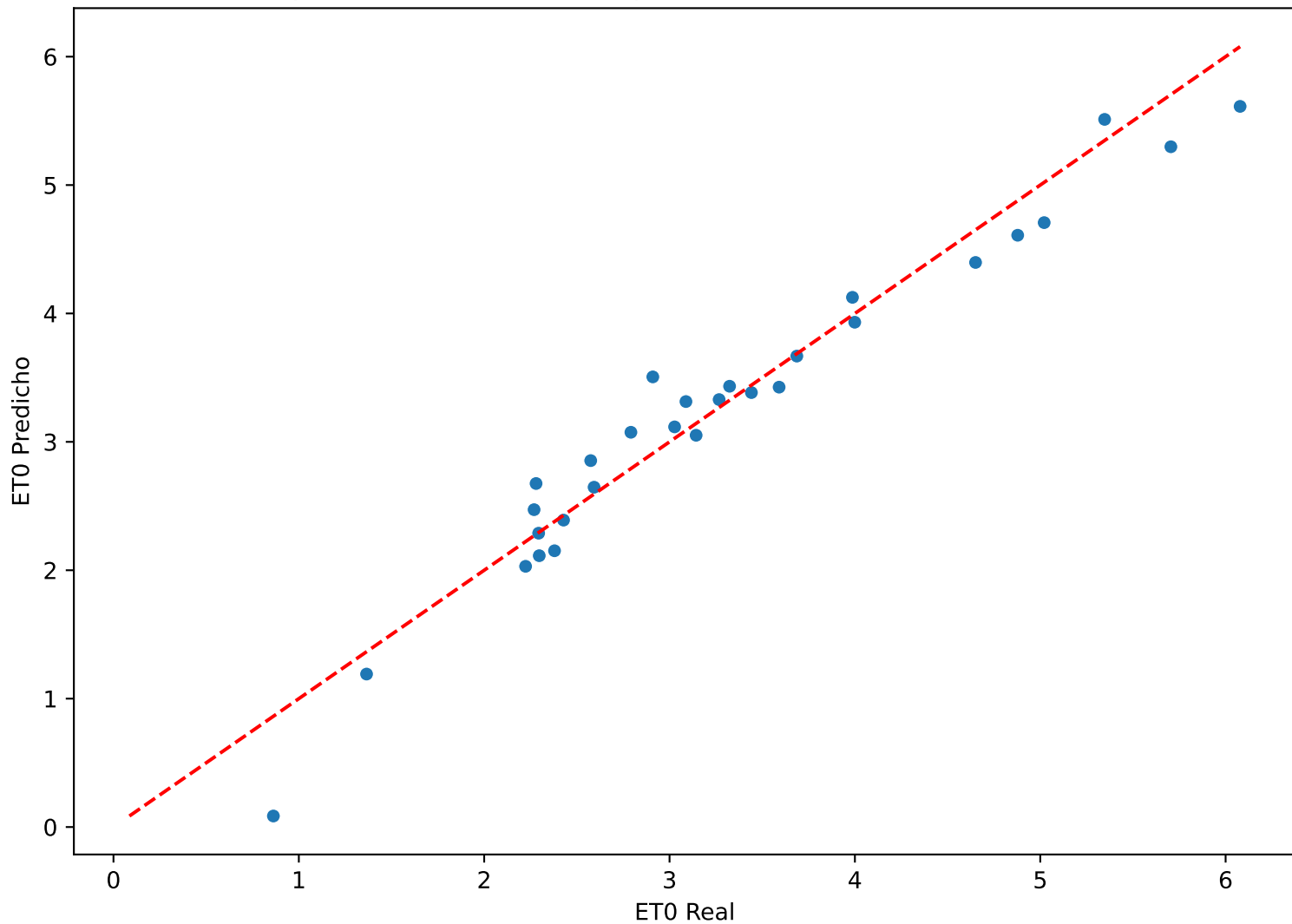
Matriz de Correlación entre Variables Meteorológicas



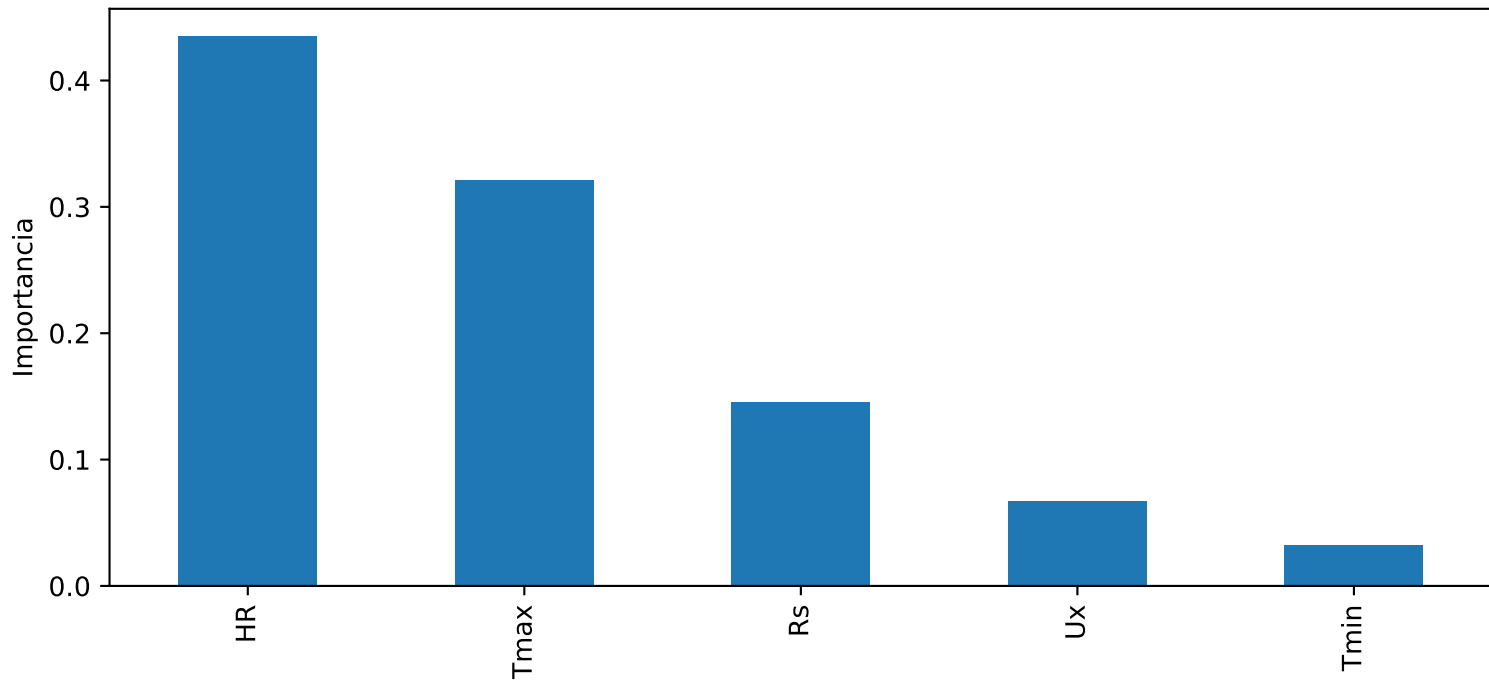
Dispersión — Ensenada (2011-2012)



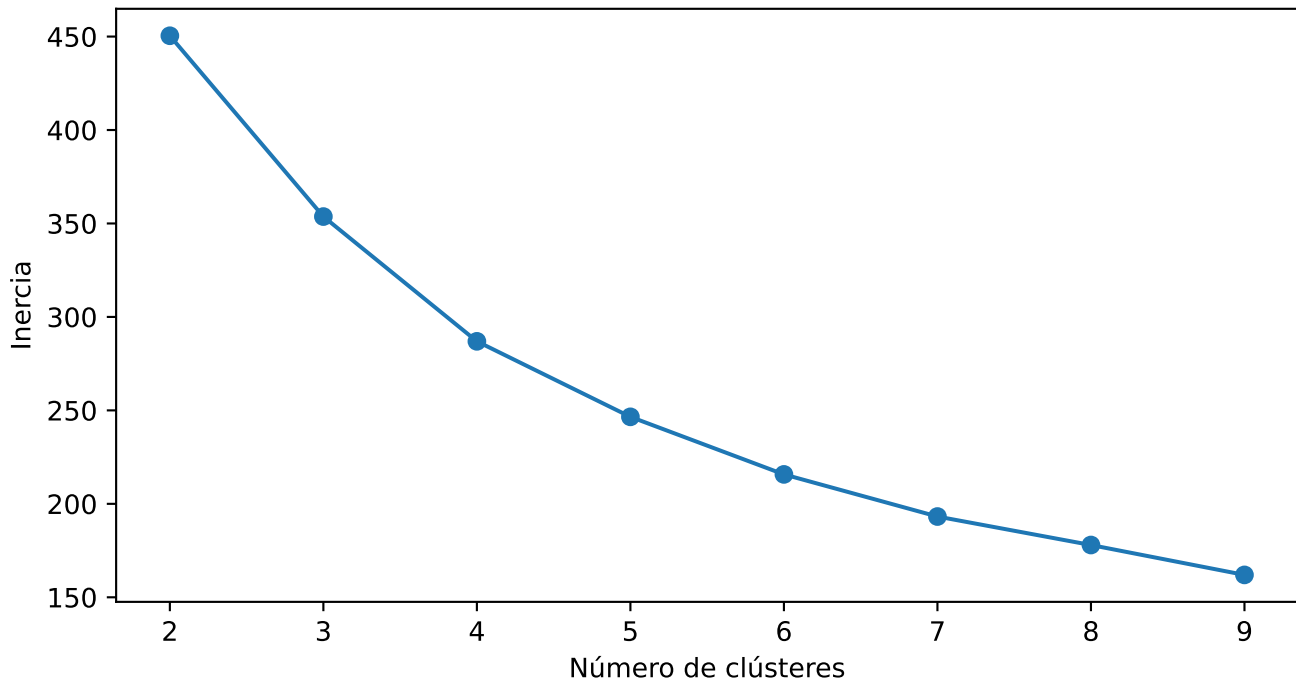
Comparación entre ET0 Real y Predicho — Ensenada (2011-2012)



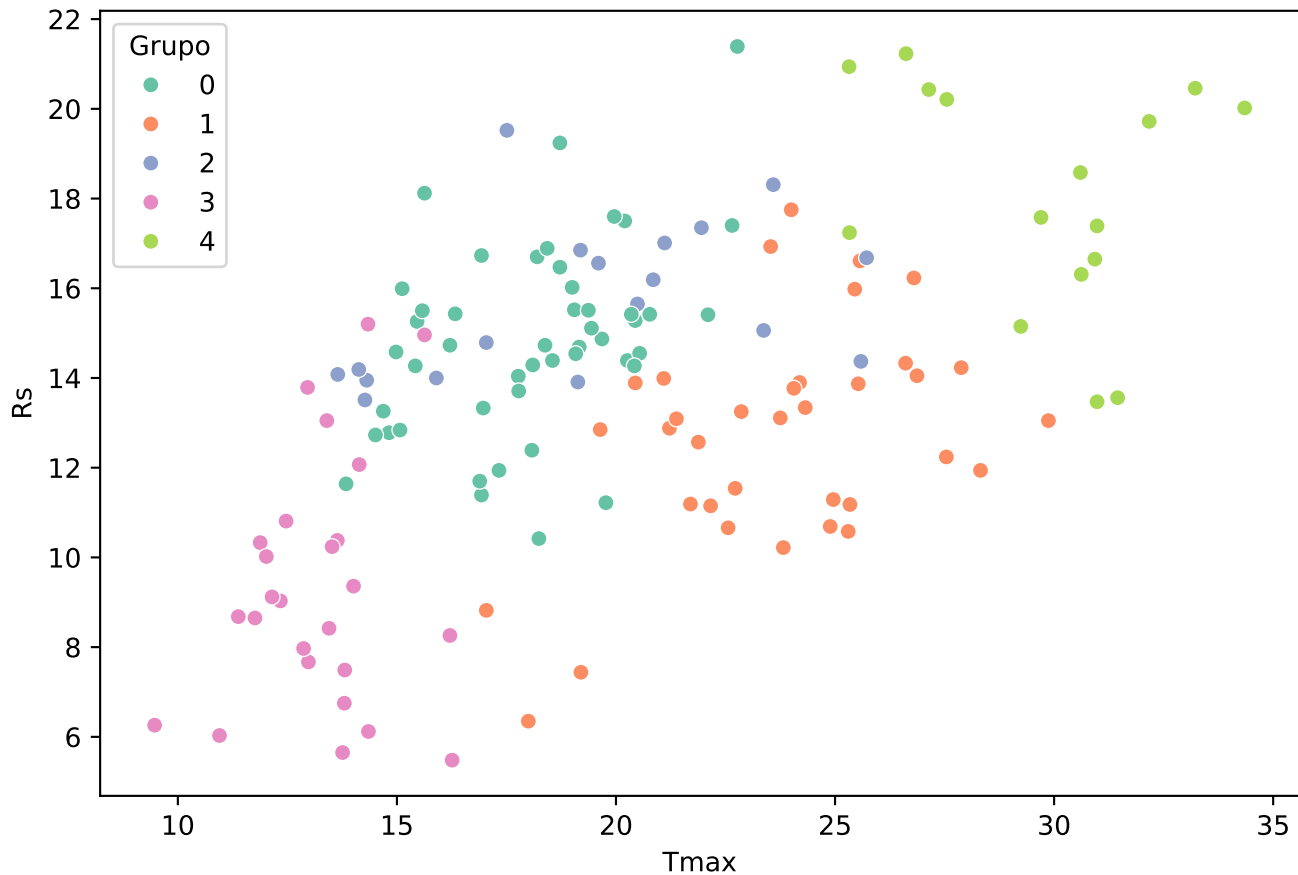
Importancia de variables (RF) — Ensenada (2011-2012)



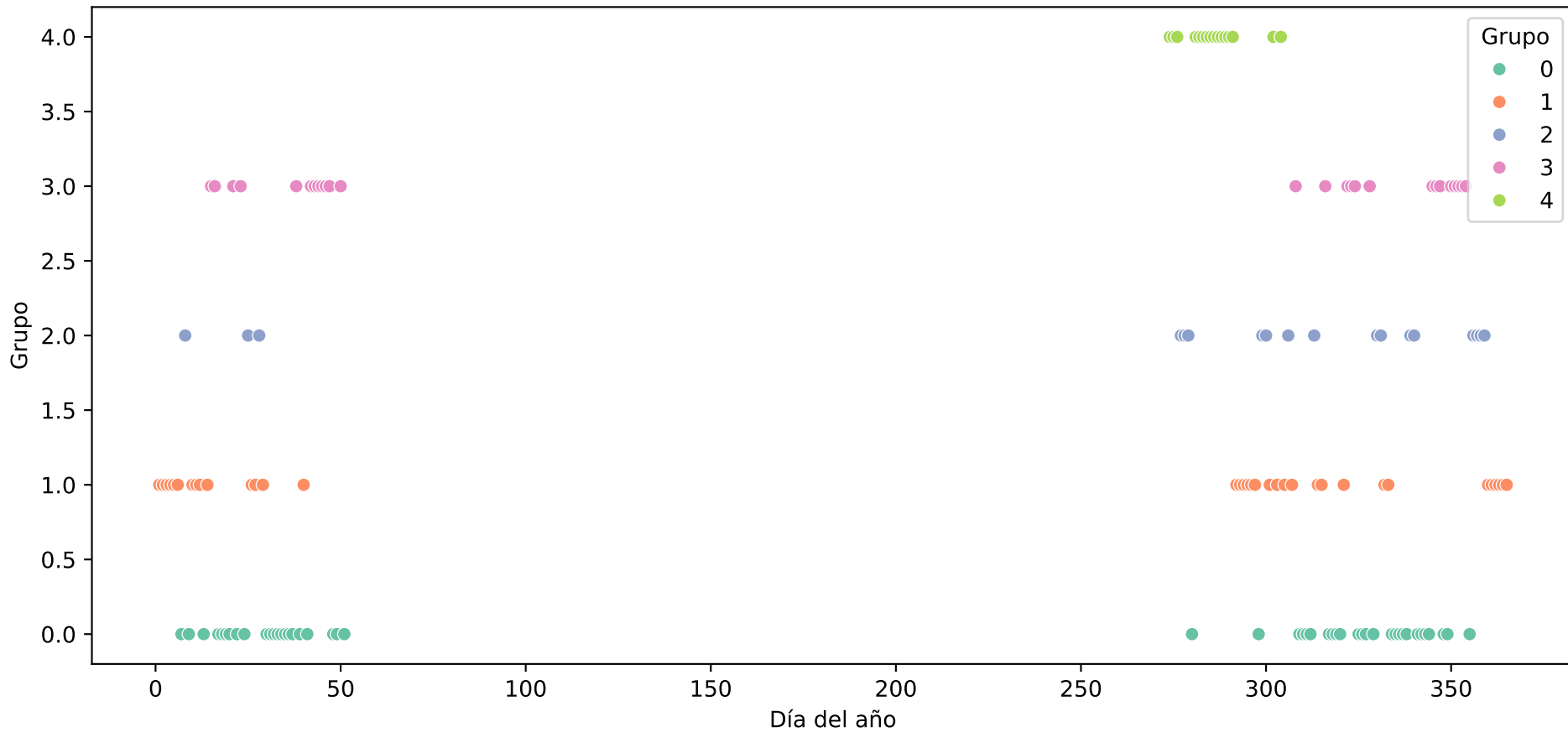
Método del codo



Clasificación de días climáticos — Ensenada (2011-2012)

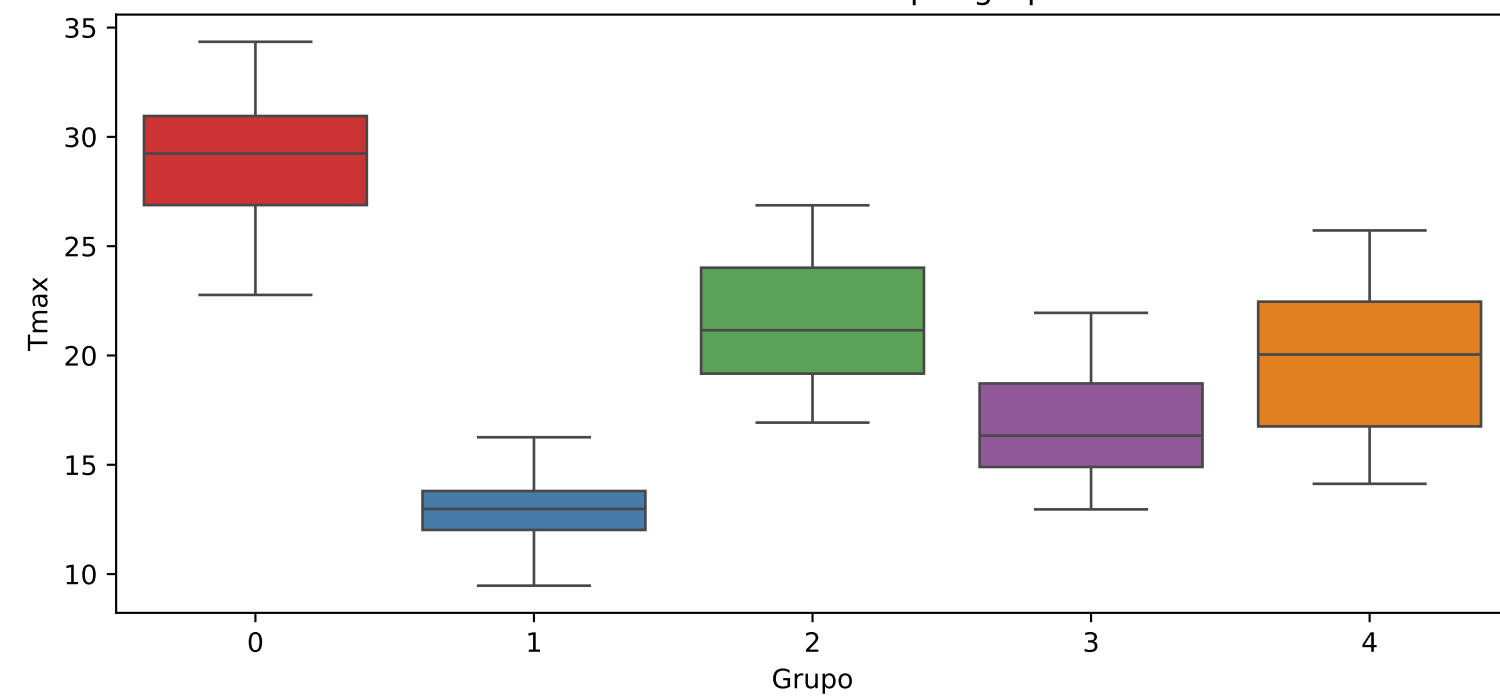


Distribución de días por grupo — Ensenada (2011-2012)

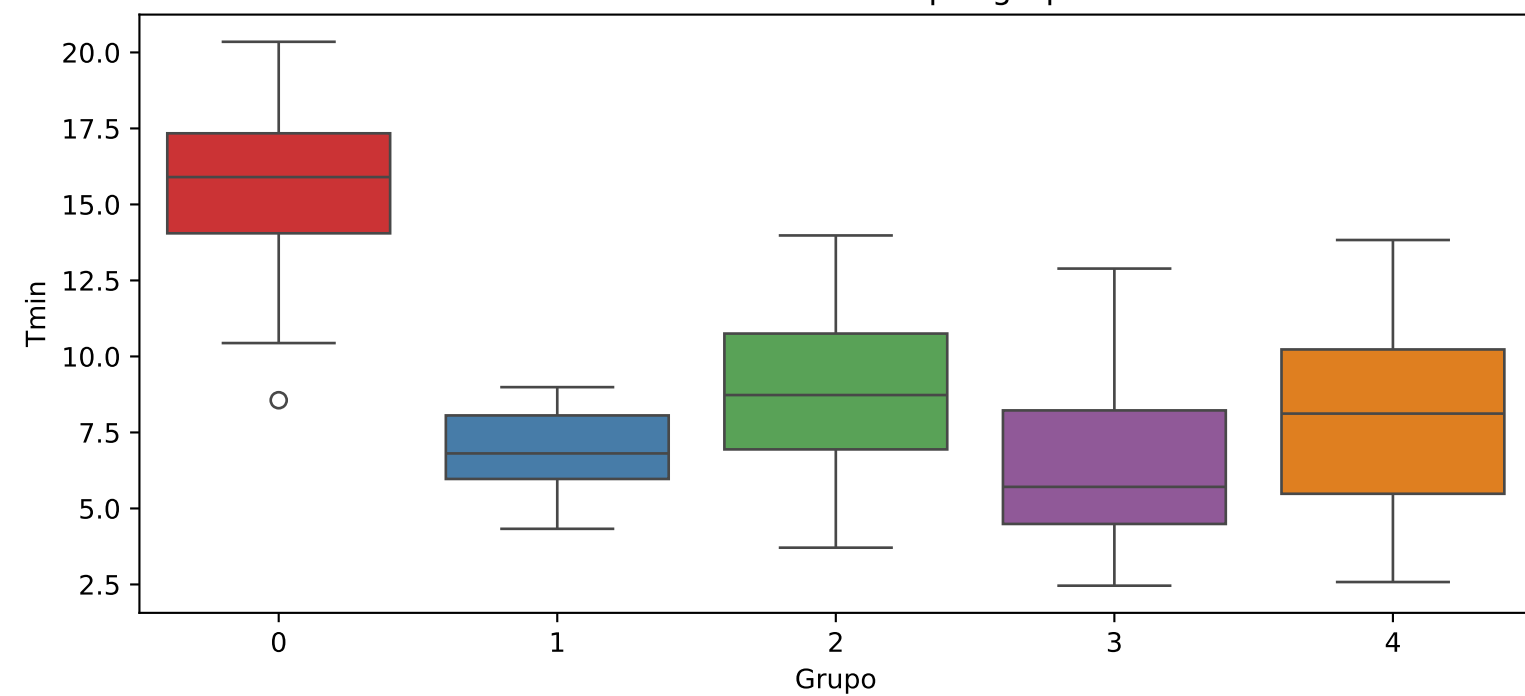


Boxplots por grupo — Ensenada (2011-2012)

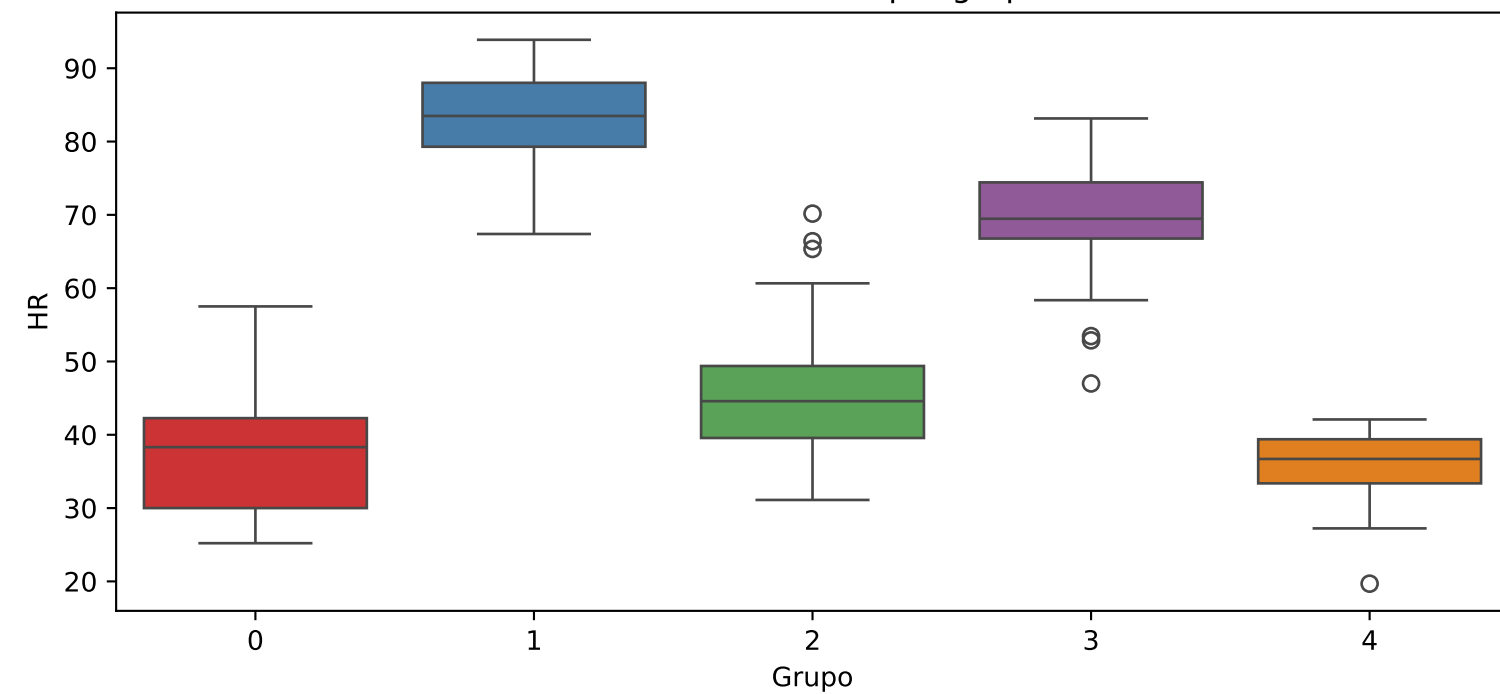
Distribución de Tmax por grupo



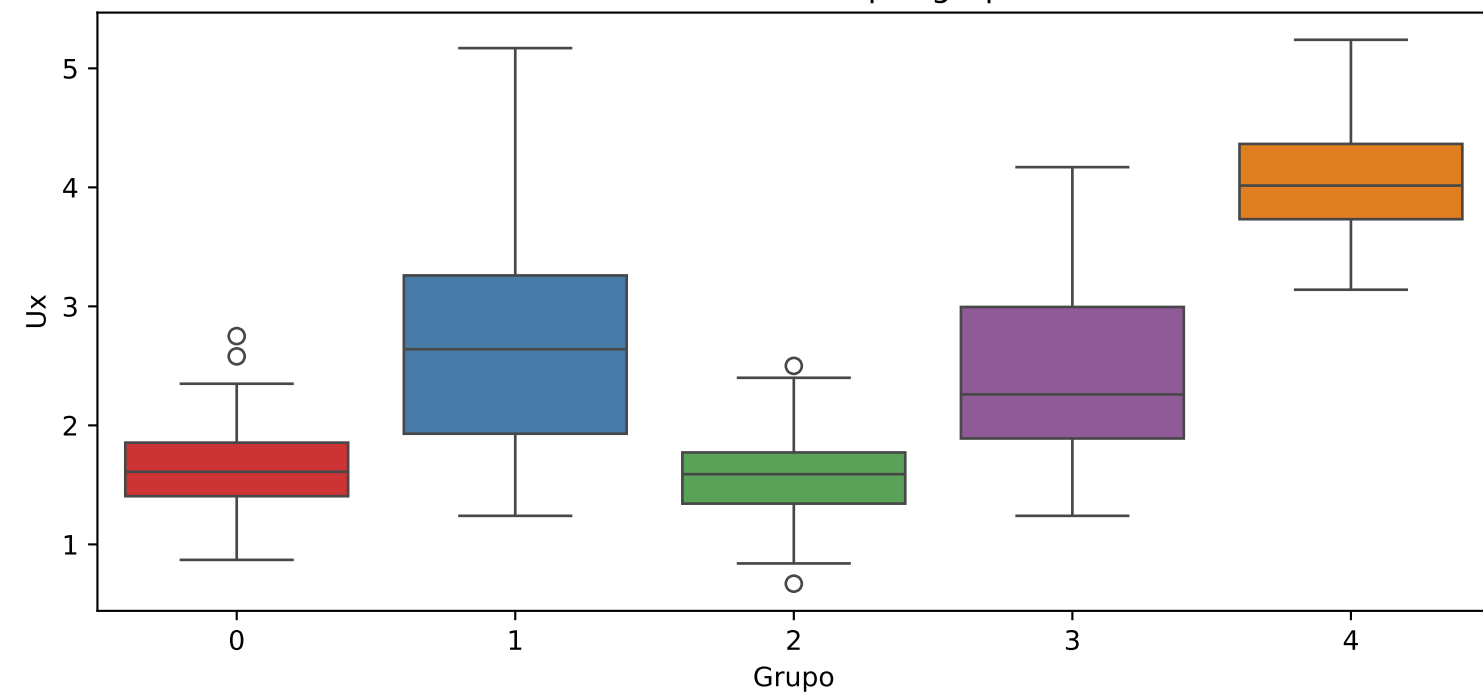
Distribución de Tmin por grupo



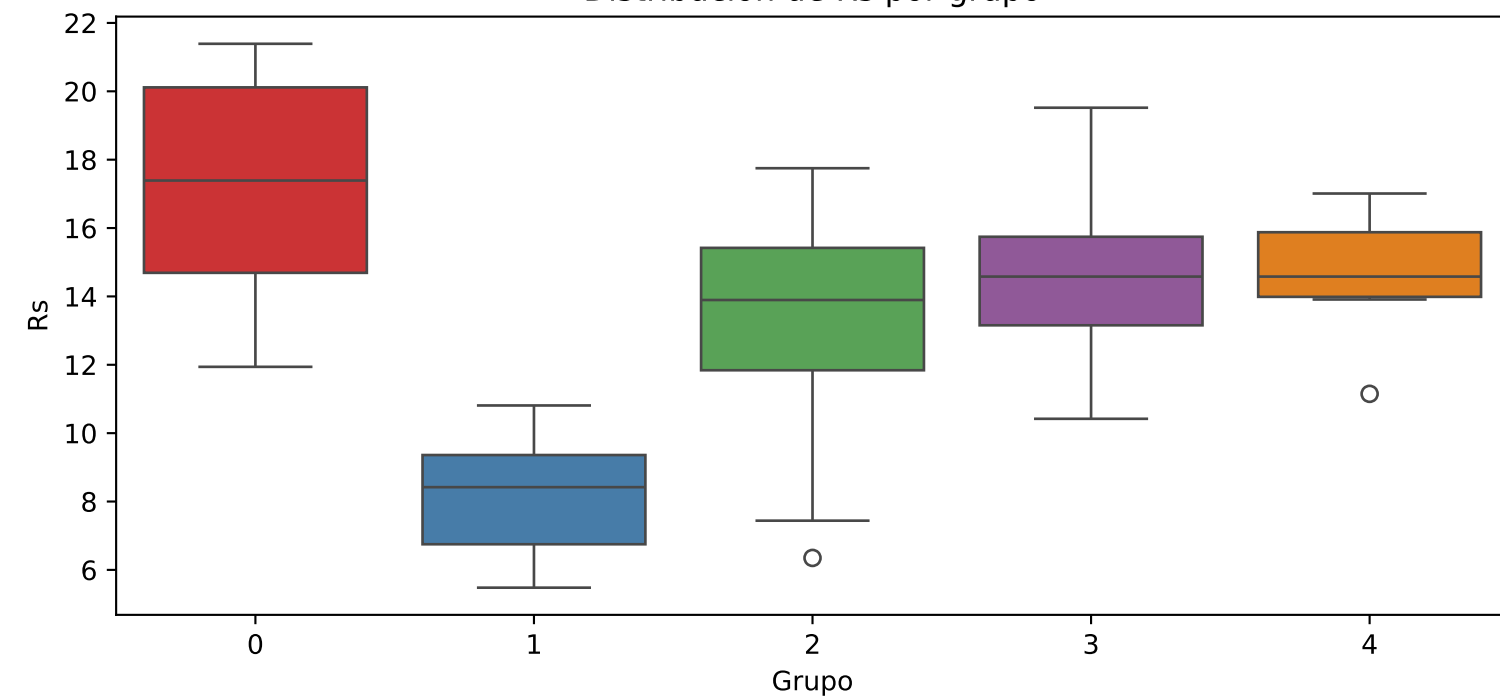
Distribución de HR por grupo



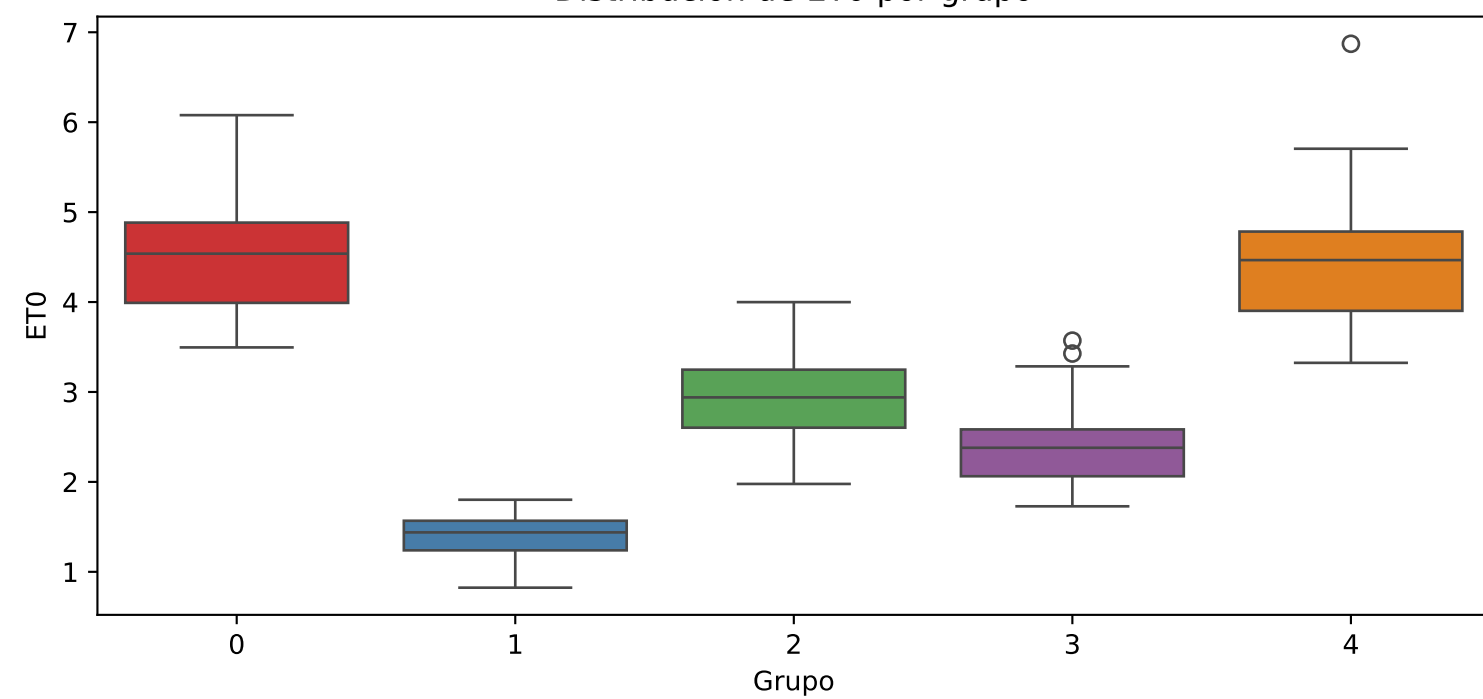
Distribución de Ux por grupo



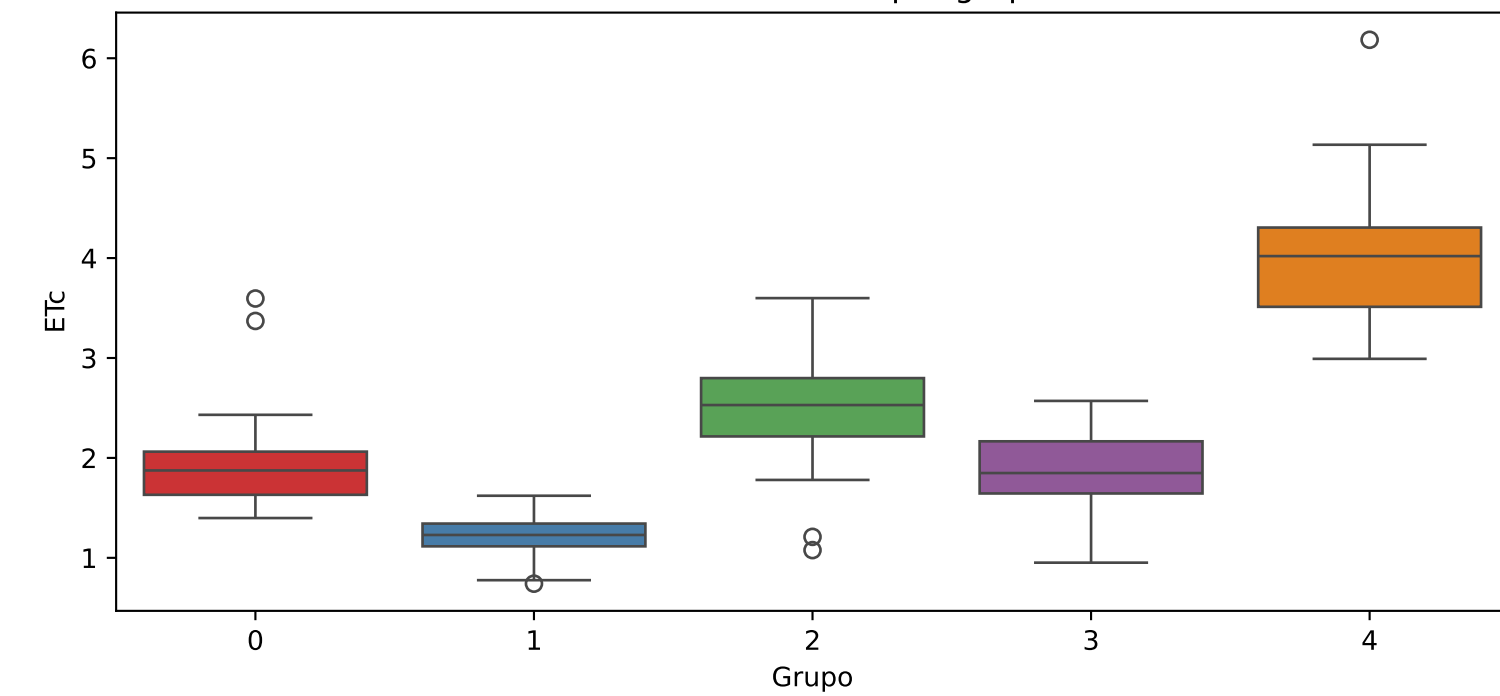
Distribución de Rs por grupo



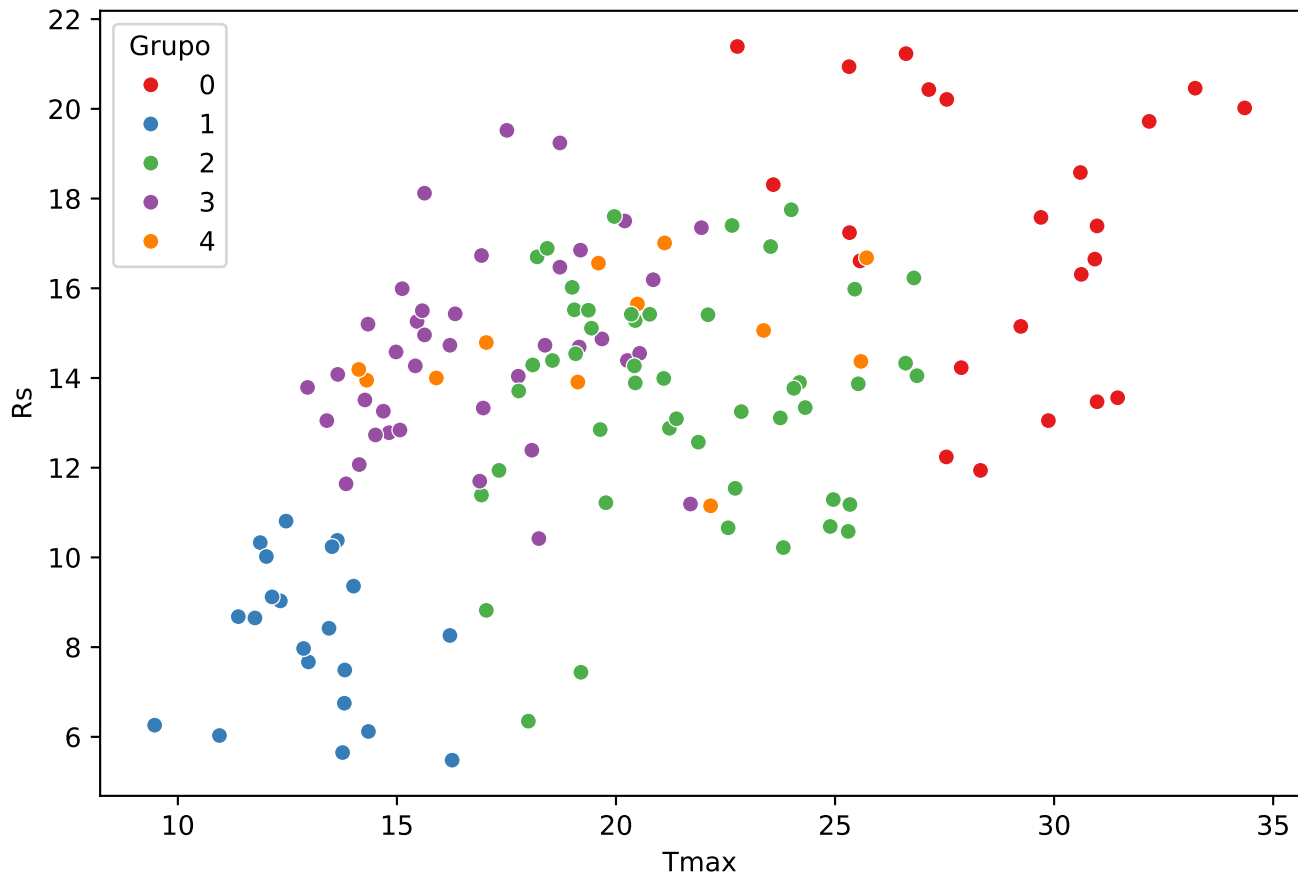
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2011-2012)



Ensenada — 2012-2013

Días del ciclo: 143

ETc total [mm]: 303.0

ETverde total [mm]: 30.5

ETazul total [mm]: 272.4

Tmax / Tmin [°C]: 36.5 / -0.1

Ensenada — 2012-2013 · Resultados y métricas

[Ensenada 2012-2013] Regresión Lineal ET0 — R^2 : 0.9623 MSE: 0.0487

[Ensenada 2012-2013] Random Forest ET0 — R^2 : 0.8871 MSE: 0.1459

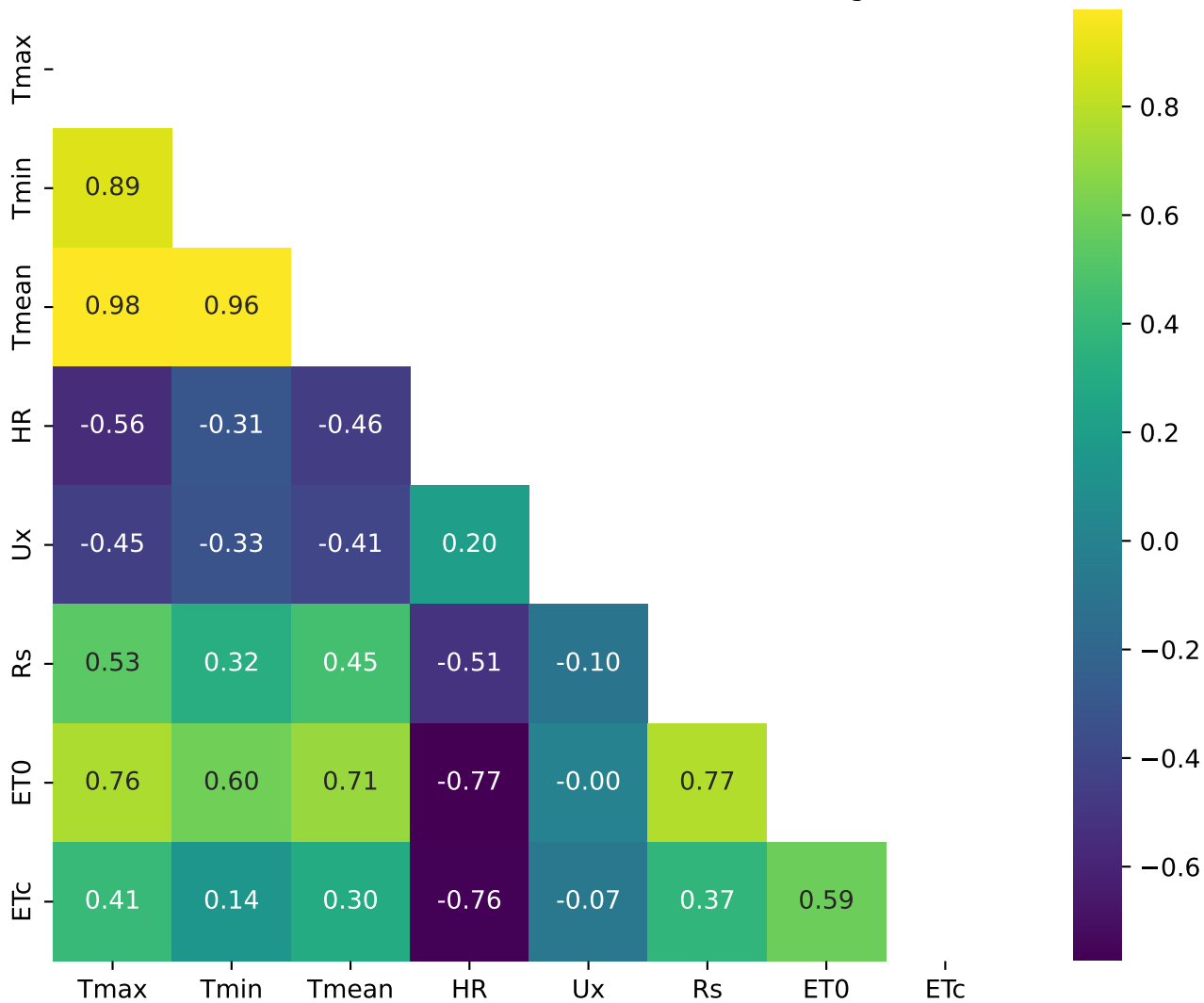
Importancias: {'Tmax': 0.34182685498287096, 'Tmin': 0.04465741355632418, 'HR': 0.29750235374884904, 'Ux': 0.035732685480001844, 'Rs': 0.28028069223195395}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 28.920476 | 15.889524 | 43.855238 | 2.242857 | 19.310952 | 4.982682 | 1.993073 |
| 1 | 13.784286 | 6.494571 | 81.761714 | 3.110857 | 10.607143 | 1.621461 | 1.316280 |
| 2 | 16.082143 | 3.961786 | 51.301071 | 2.453571 | 14.918214 | 2.798067 | 2.408314 |
| 3 | 24.692353 | 11.900000 | 36.551176 | 2.165882 | 15.460000 | 4.026473 | 3.535665 |
| 4 | 21.919286 | 11.041667 | 64.126667 | 1.759048 | 13.161190 | 2.596461 | 2.084046 |

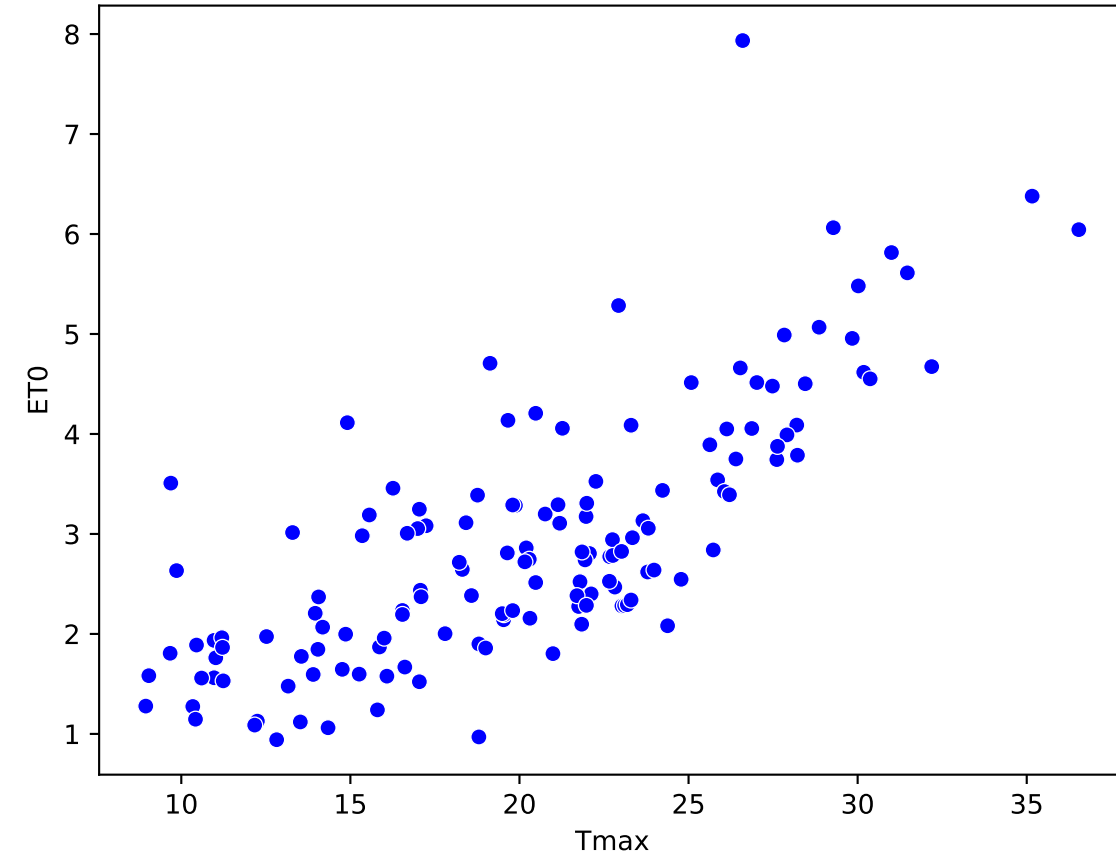
Ensenada — 2012-2013

Matriz de Correlación entre Variables Meteorológicas

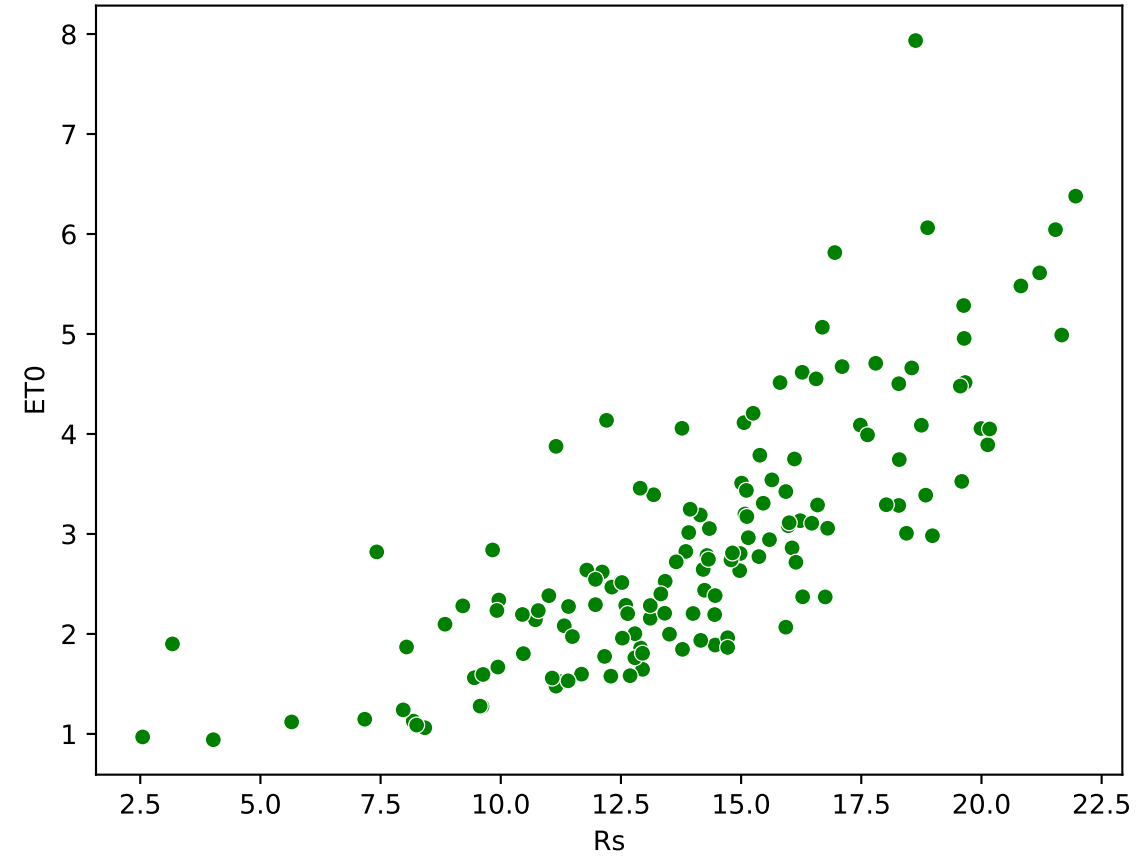


Dispersión — Ensenada (2012-2013)

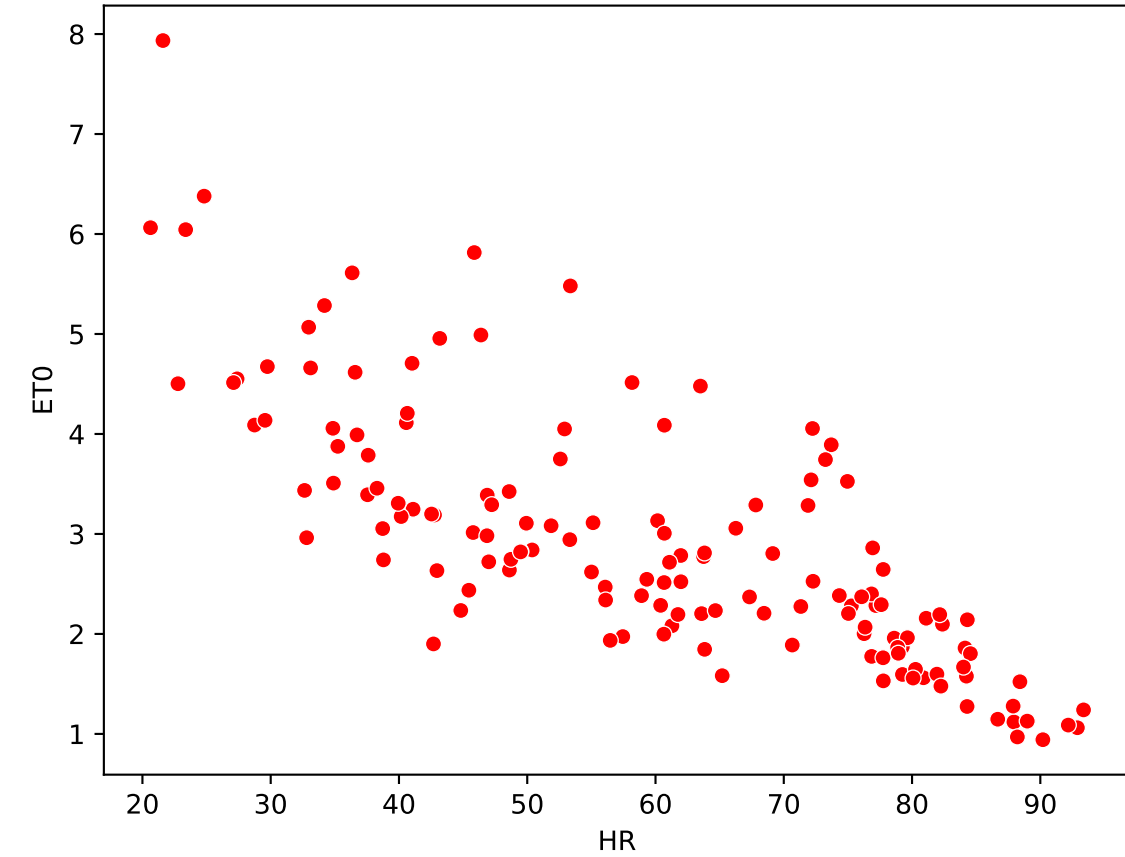
Tmax vs ET0



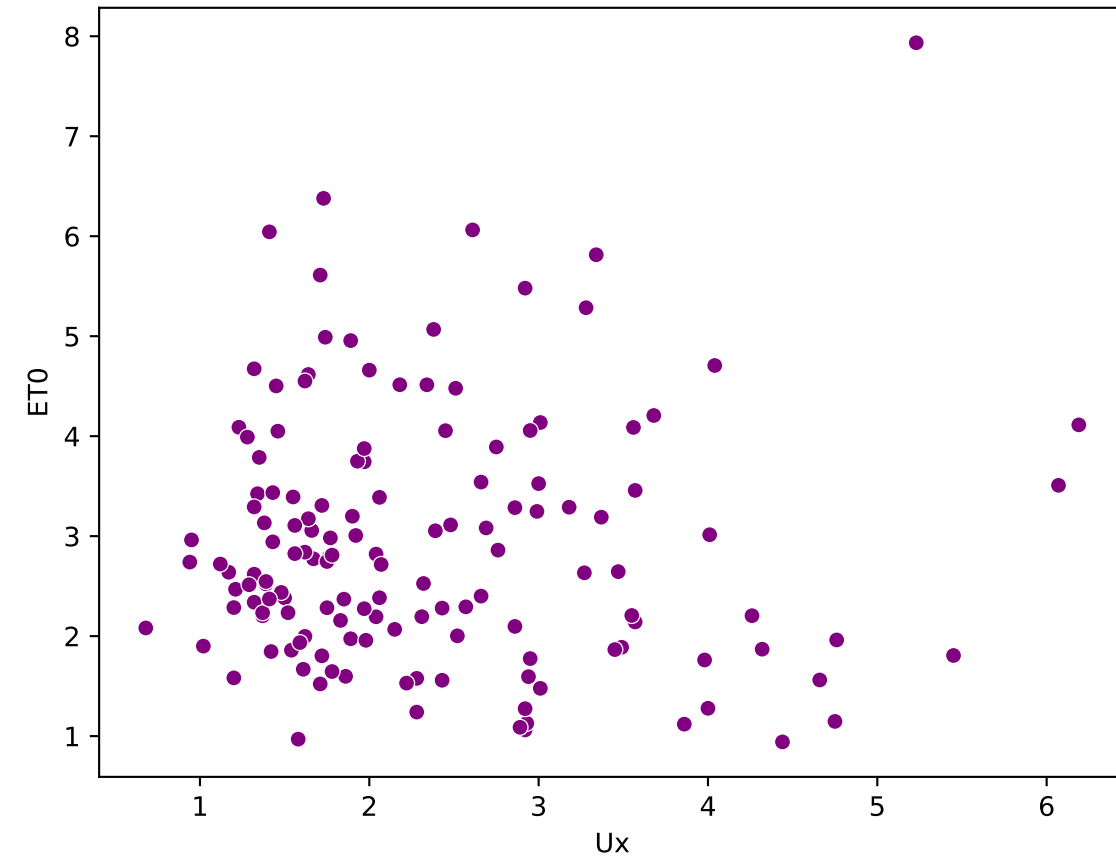
Rs vs ET0



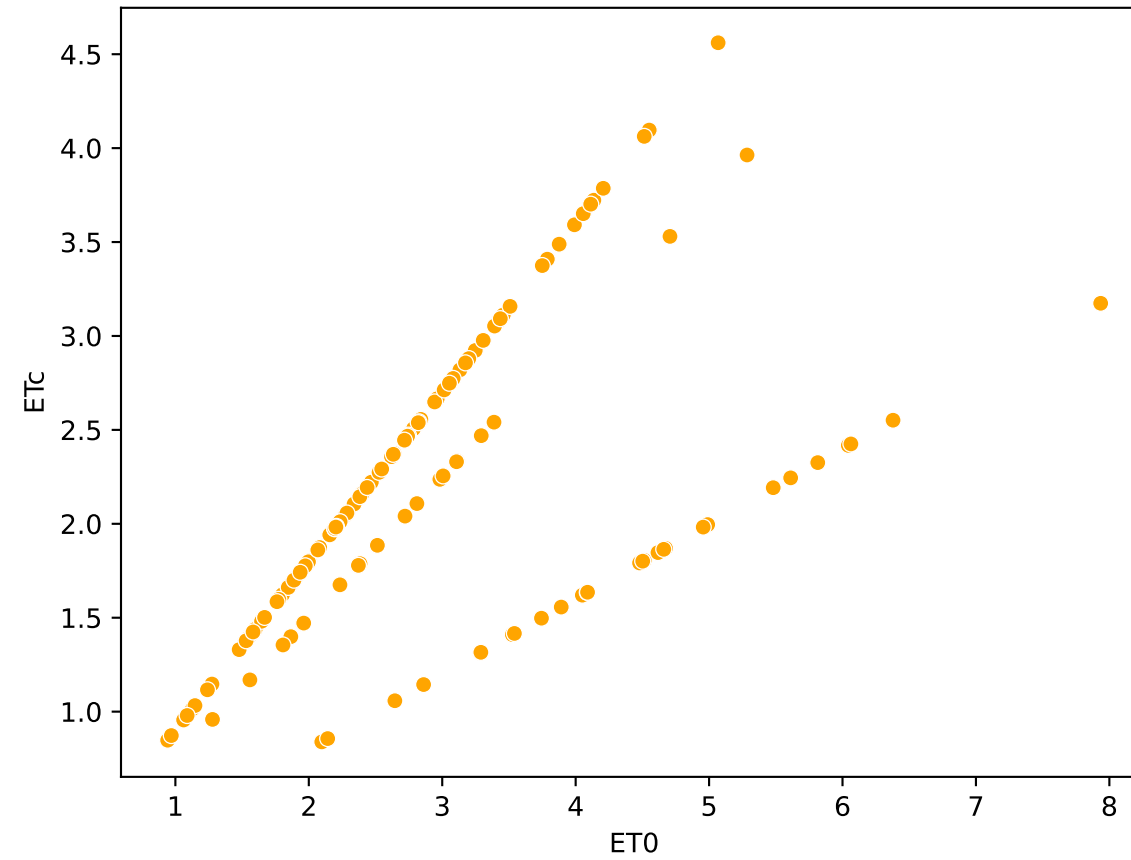
HR vs ET0



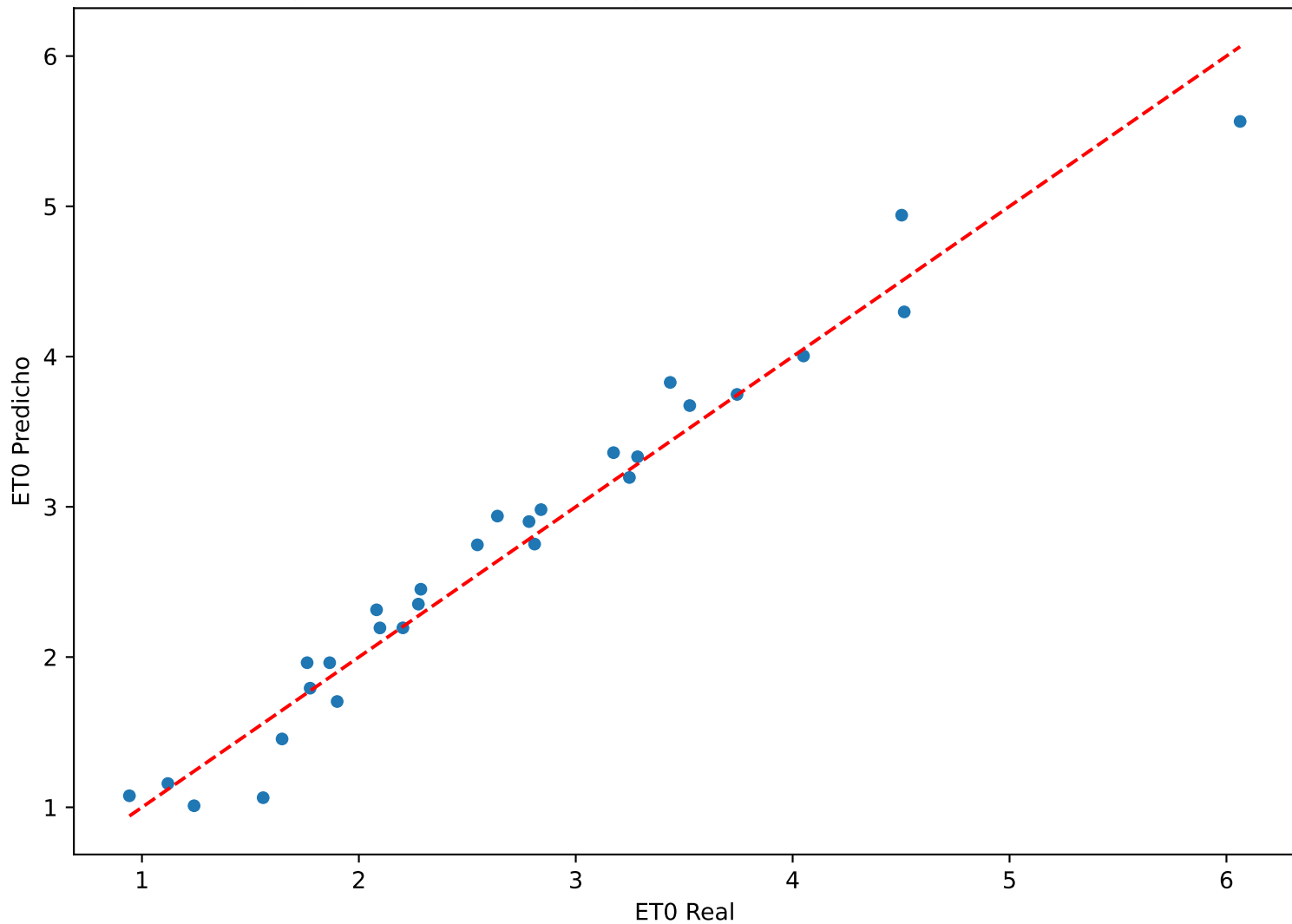
Ux vs ET0



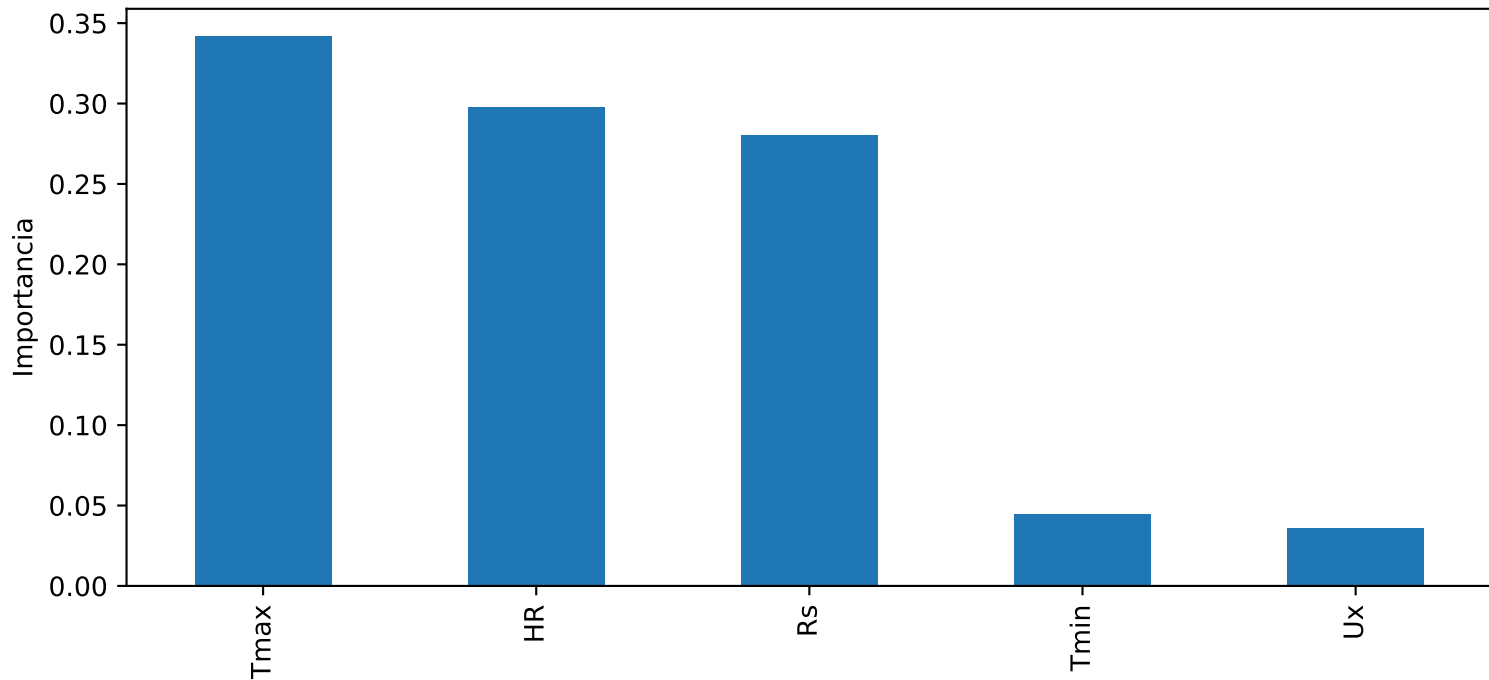
ET0 vs ETc



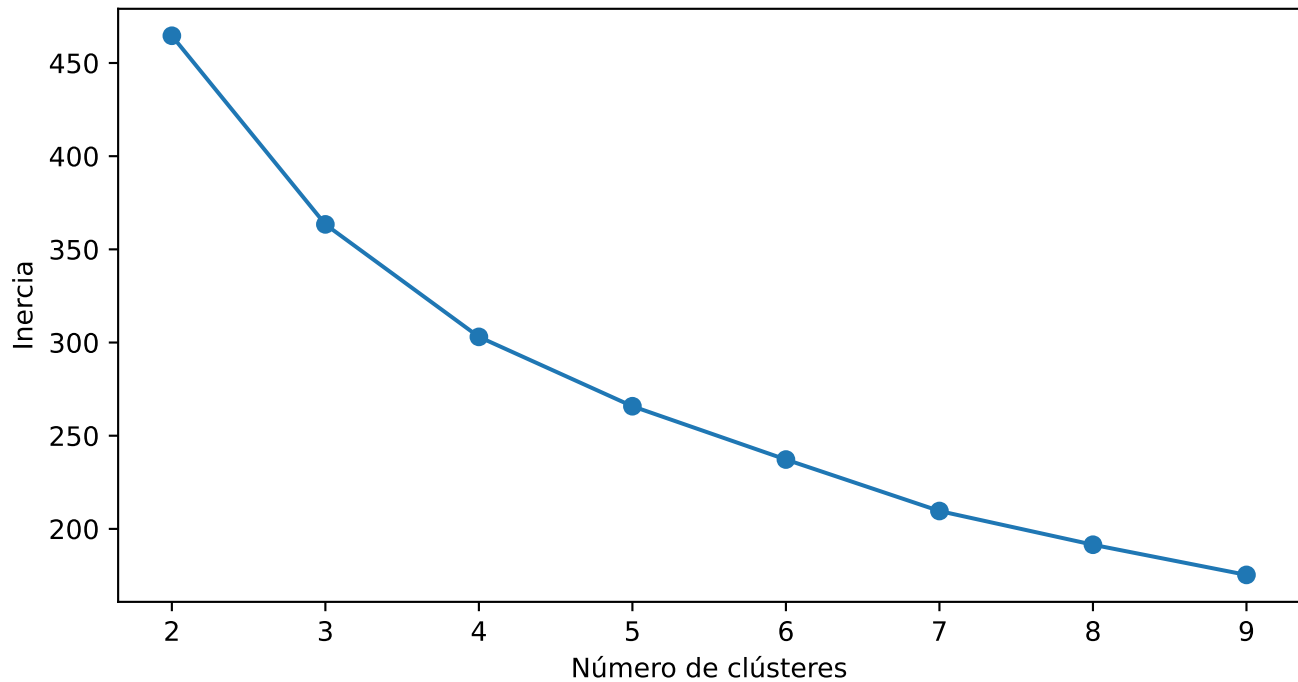
Comparación entre ET0 Real y Predicho — Ensenada (2012-2013)



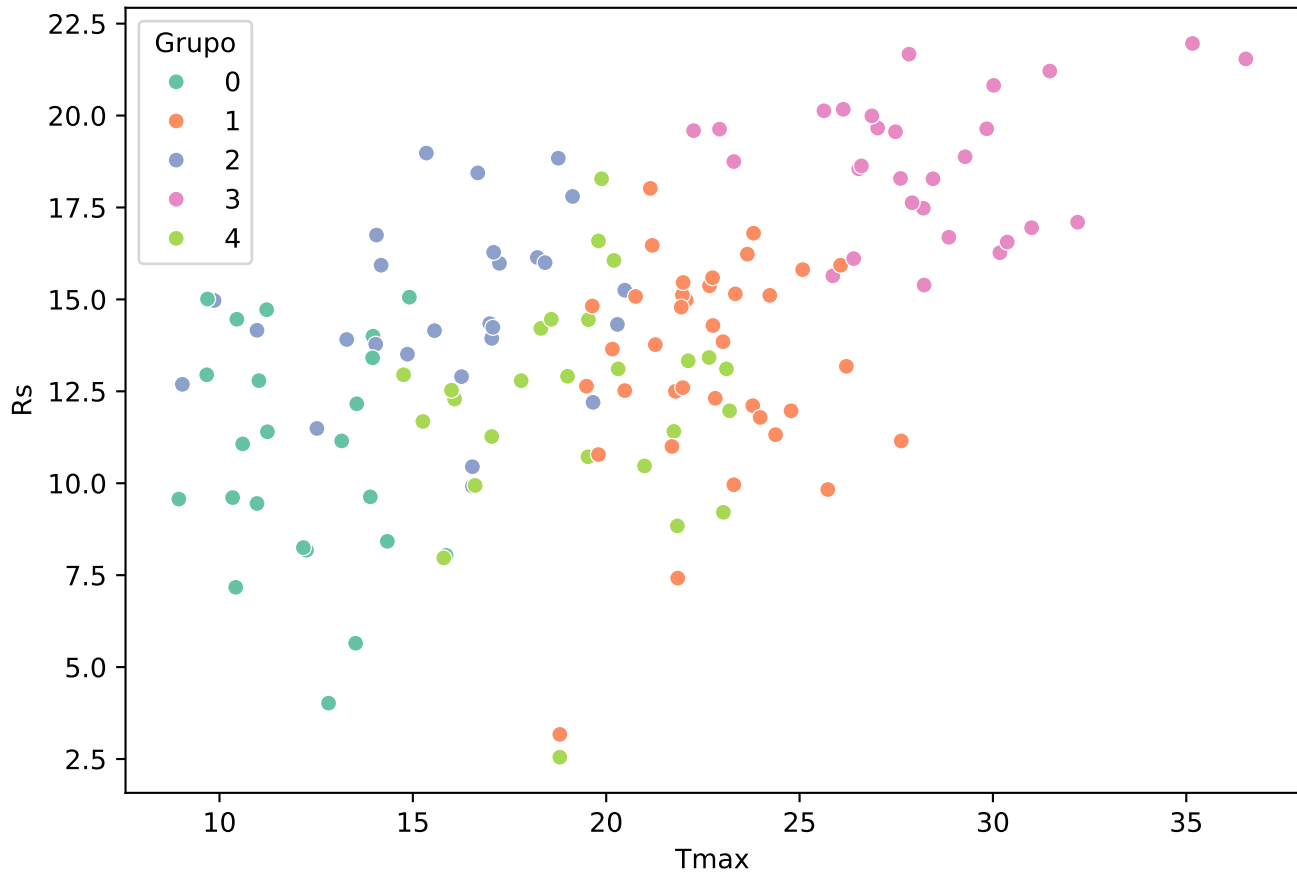
Importancia de variables (RF) — Ensenada (2012-2013)



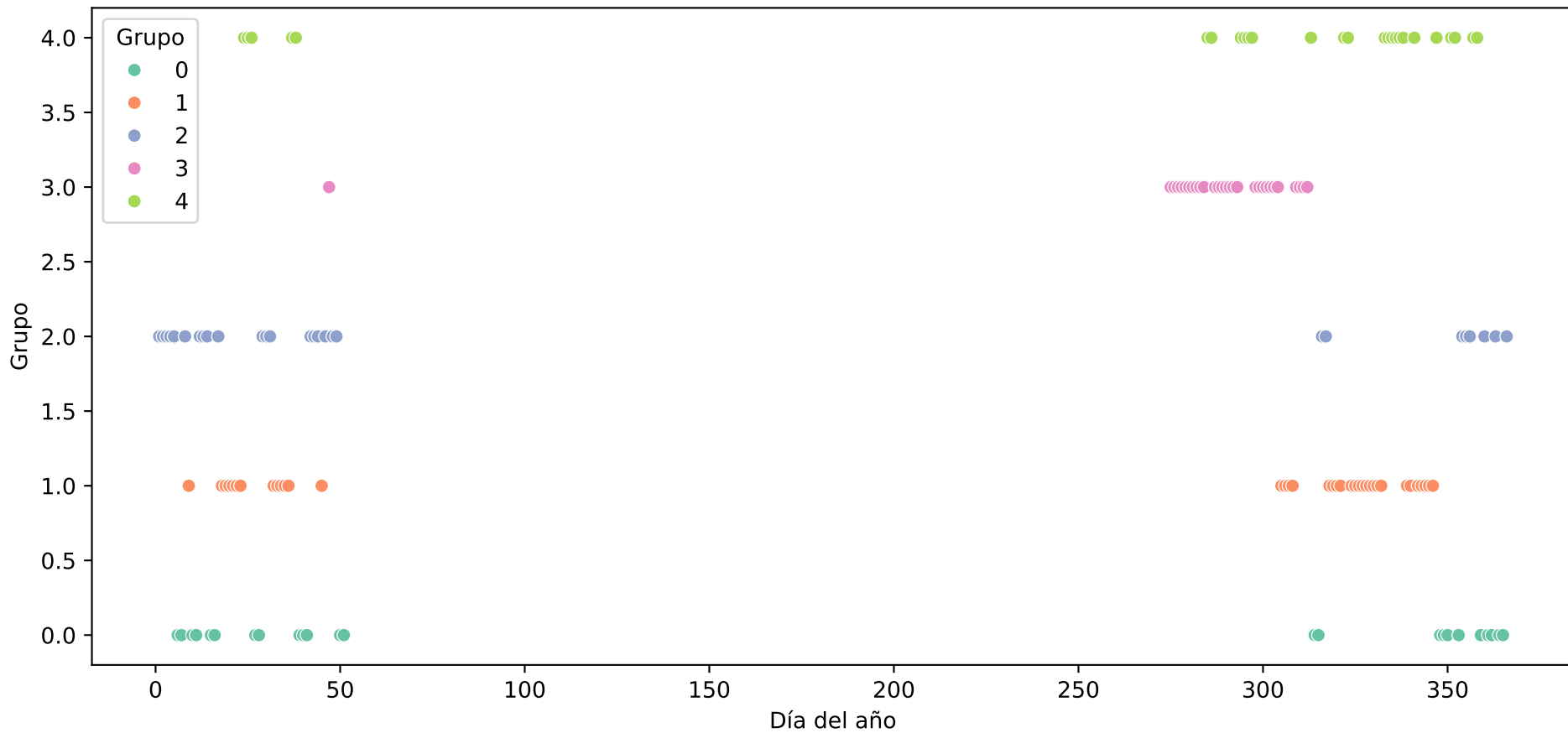
Método del codo



Clasificación de días climáticos — Ensenada (2012-2013)

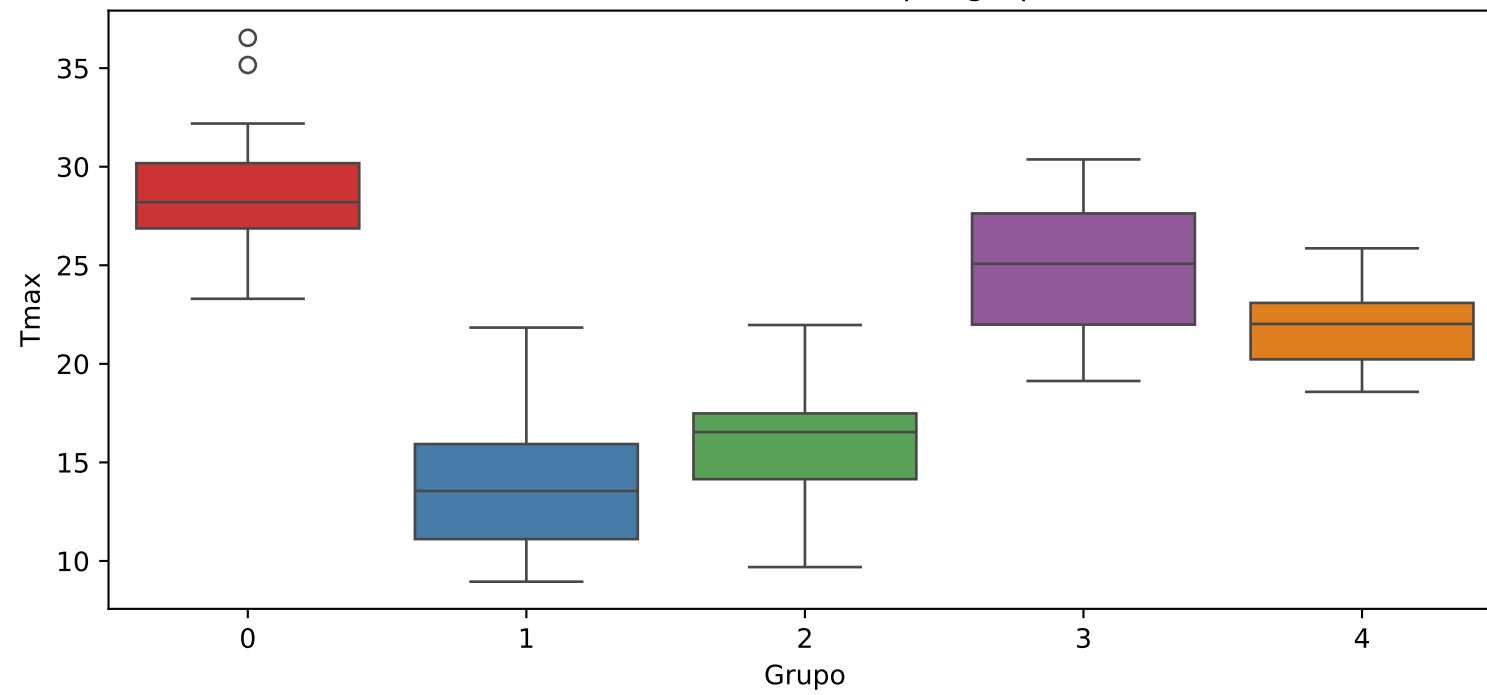


Distribución de días por grupo — Ensenada (2012-2013)

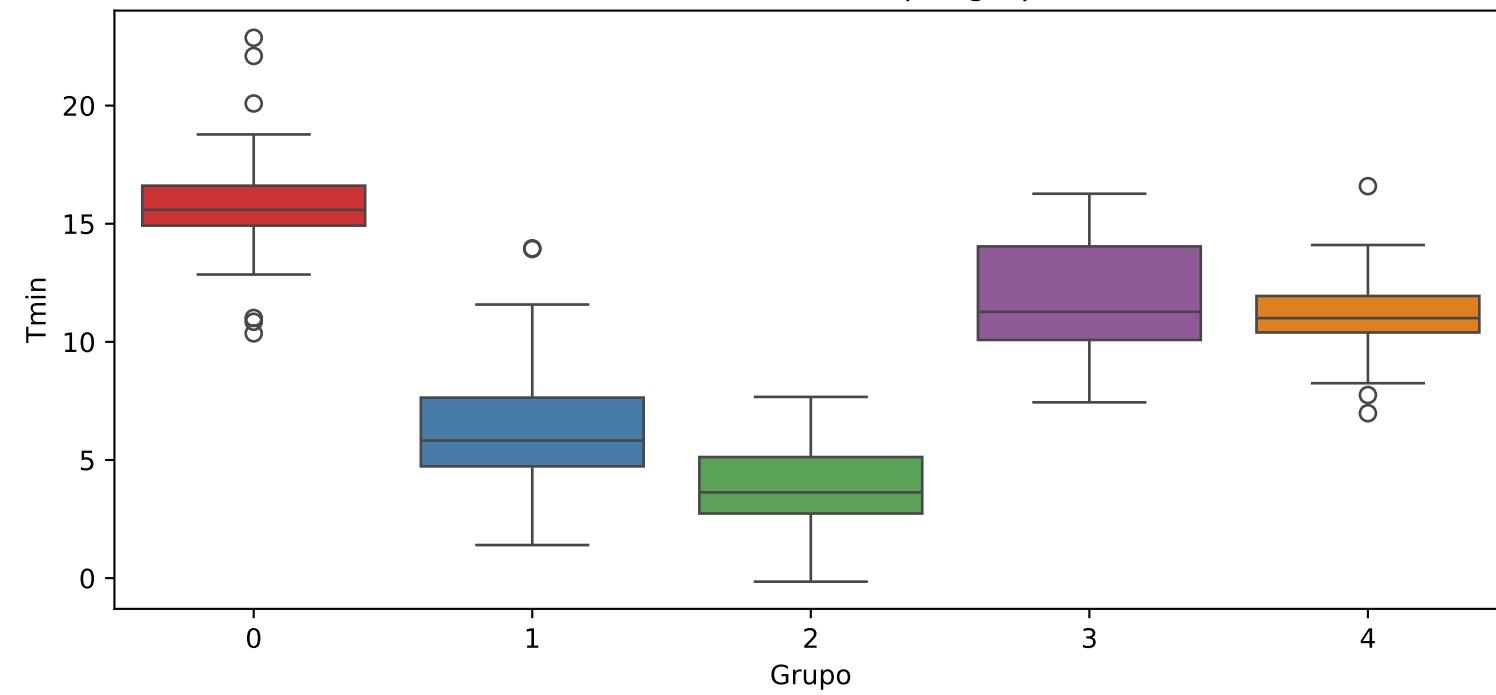


Boxplots por grupo — Ensenada (2012-2013)

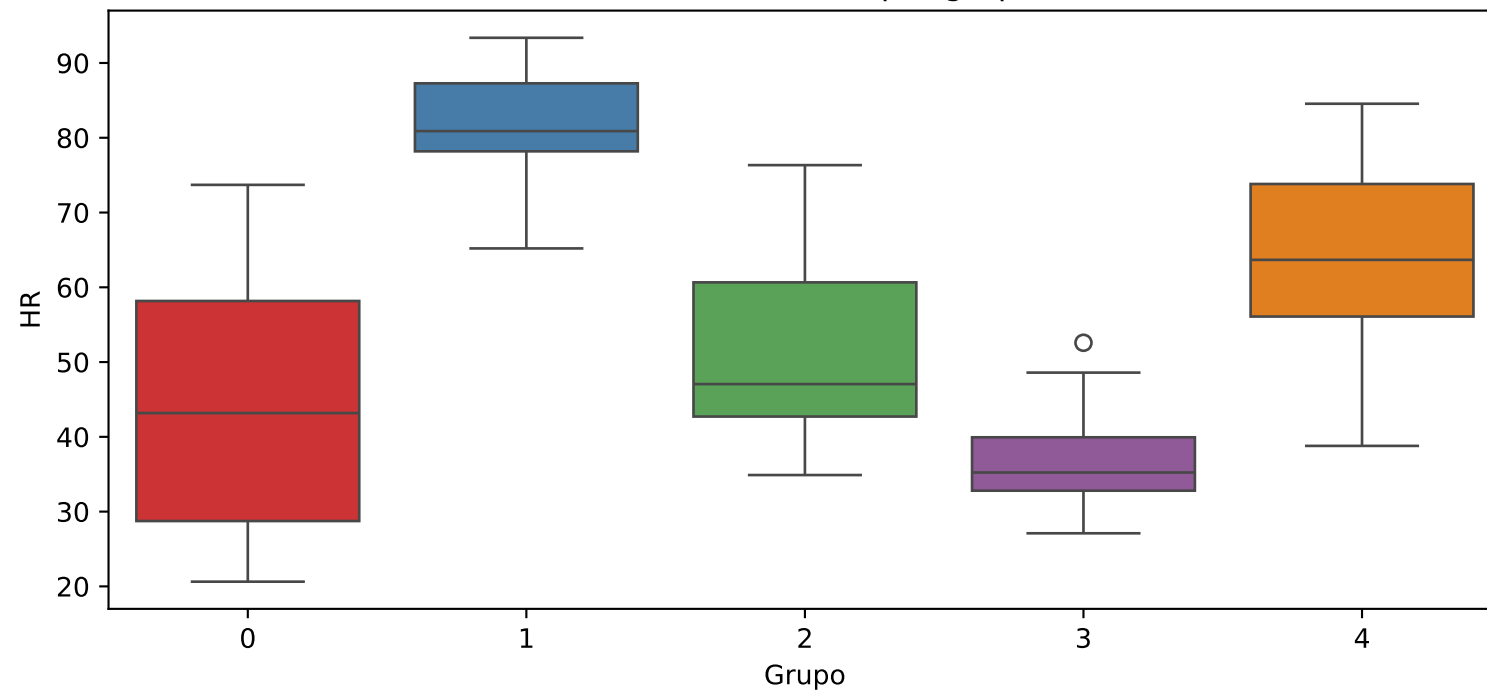
Distribución de Tmax por grupo



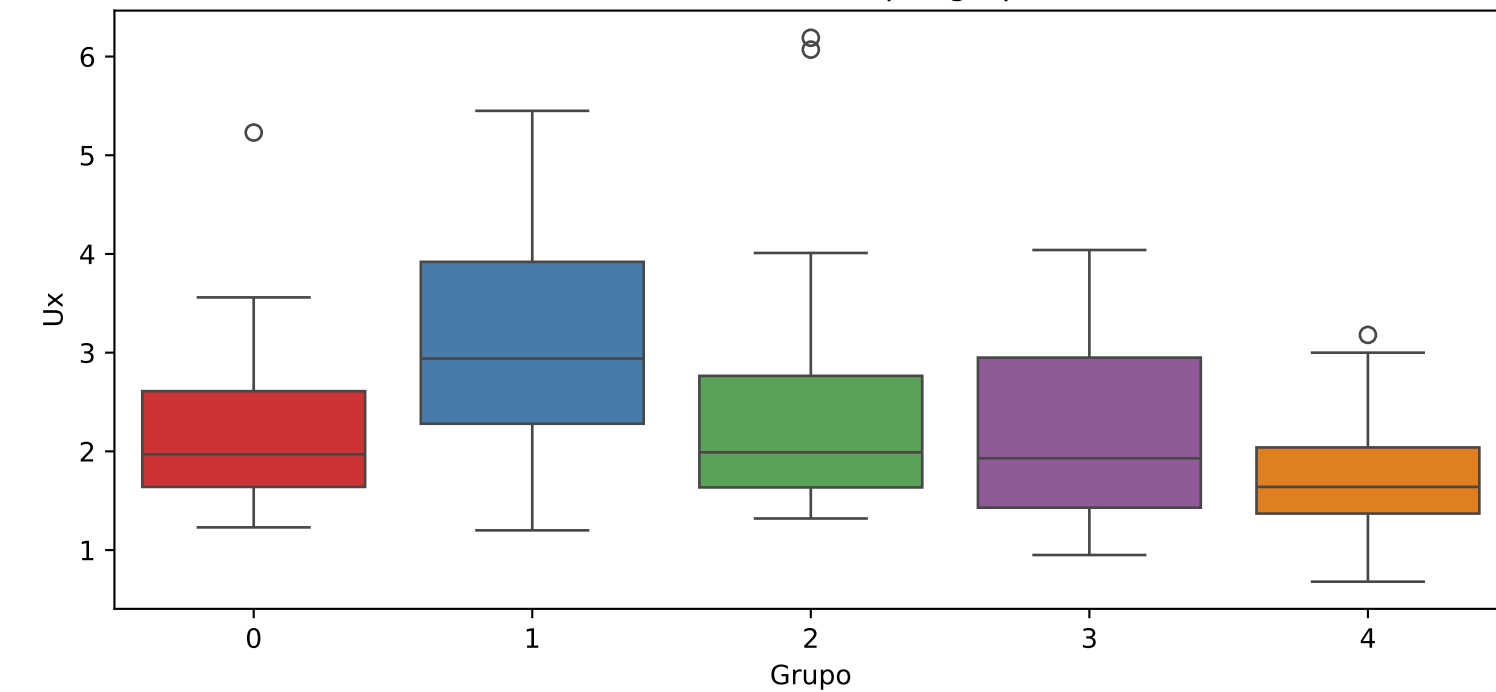
Distribución de Tmin por grupo



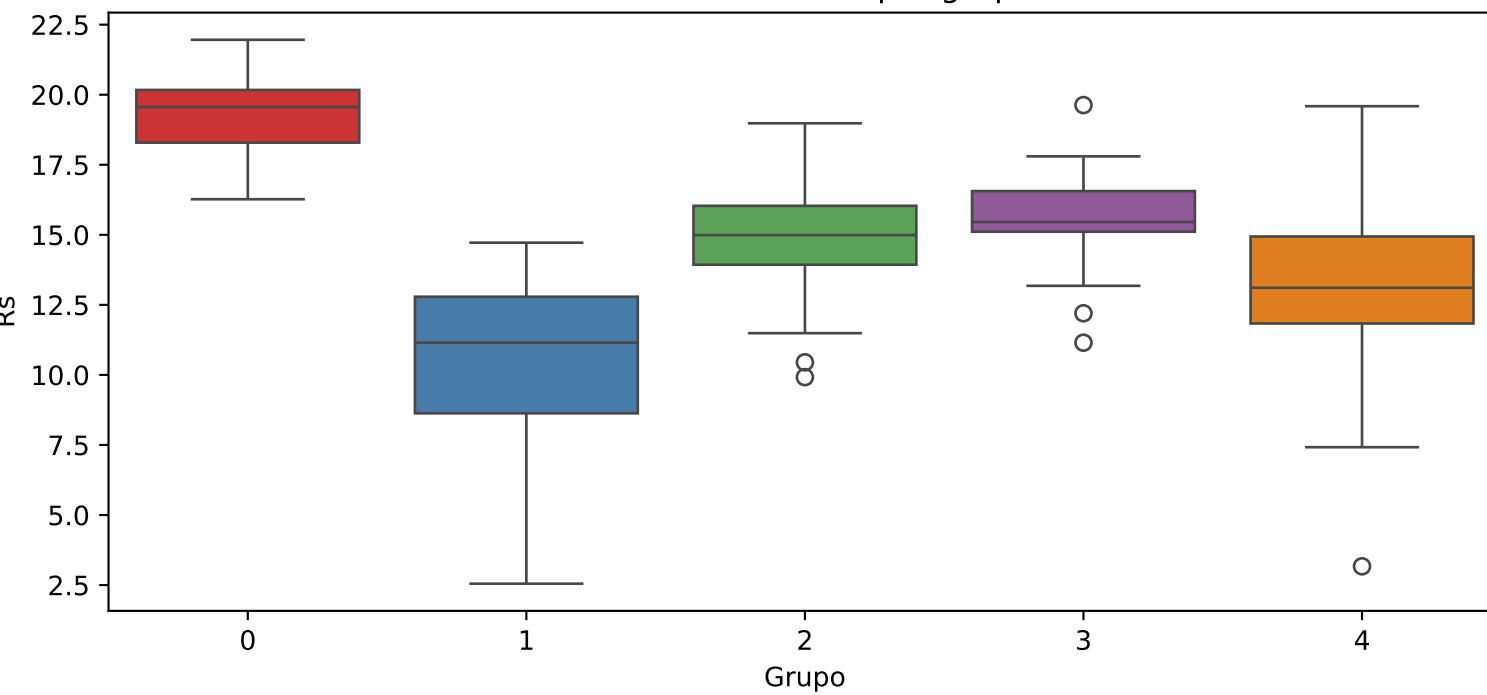
Distribución de HR por grupo



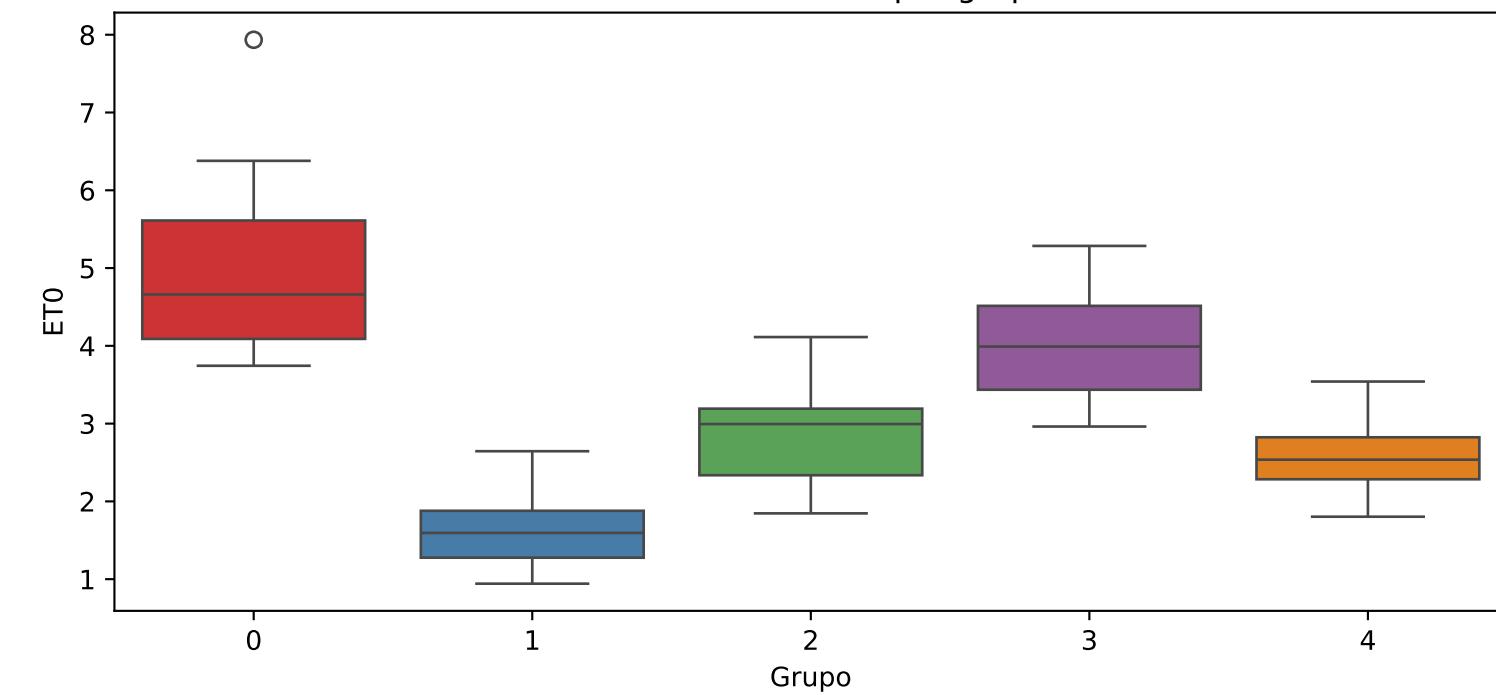
Distribución de Ux por grupo



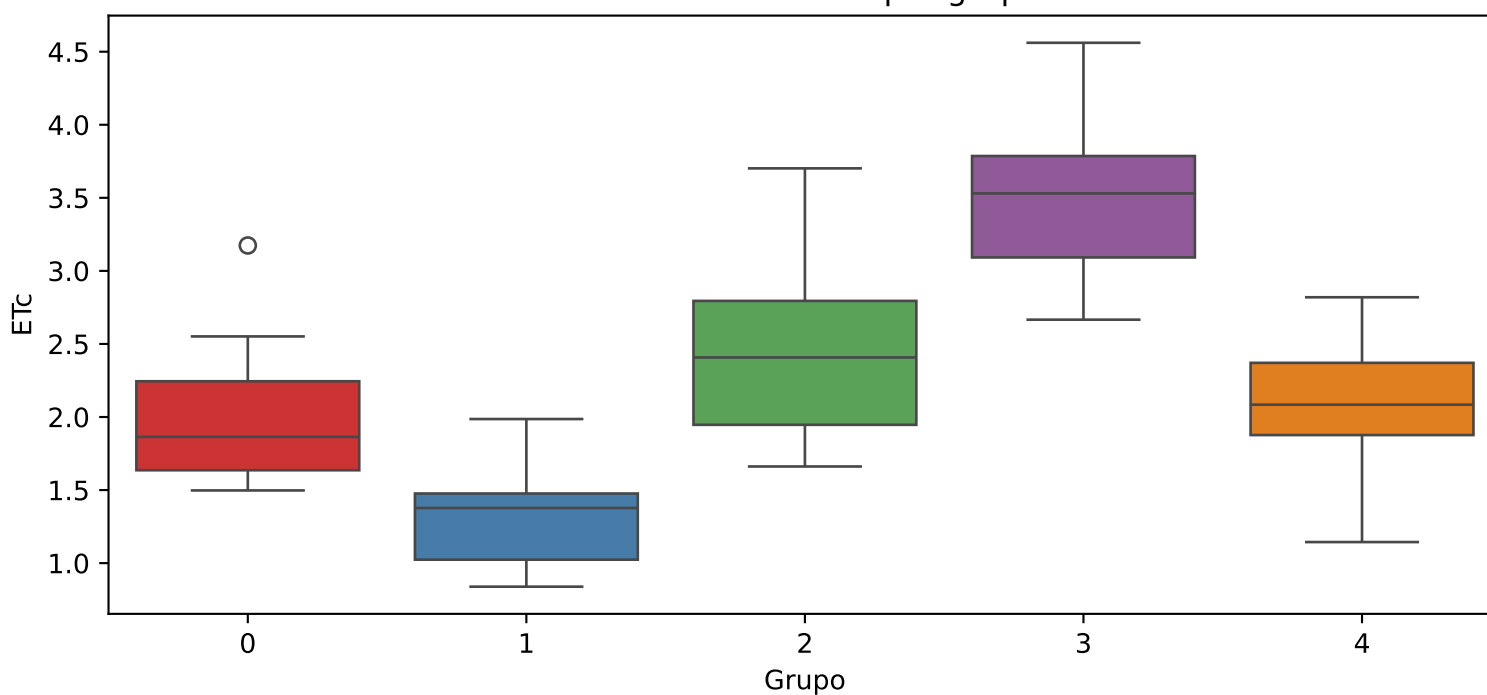
Distribución de Rs por grupo



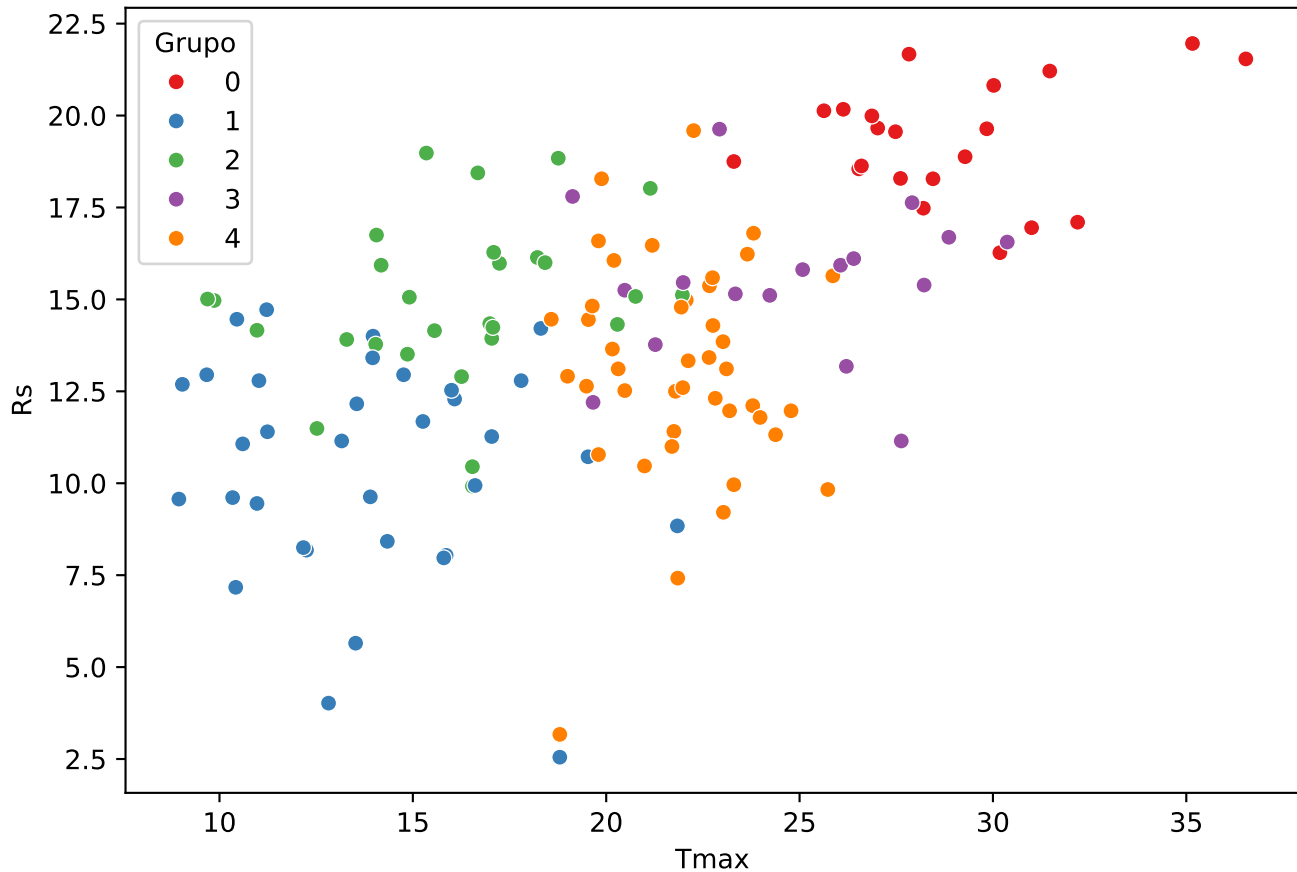
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2012-2013)



Ensenada — 2013-2014

Días del ciclo: 143

ETc total [mm]: 343.8

ETverde total [mm]: 17.9

ETazul total [mm]: 325.9

Tmax / Tmin [°C]: 30.3 / 2.8

Ensenada — 2013-2014 · Resultados y métricas

[Ensenada 2013-2014] Regresión Lineal ET0 — R^2 : 0.9331 MSE: 0.1116

[Ensenada 2013-2014] Random Forest ET0 — R^2 : 0.8593 MSE: 0.2349

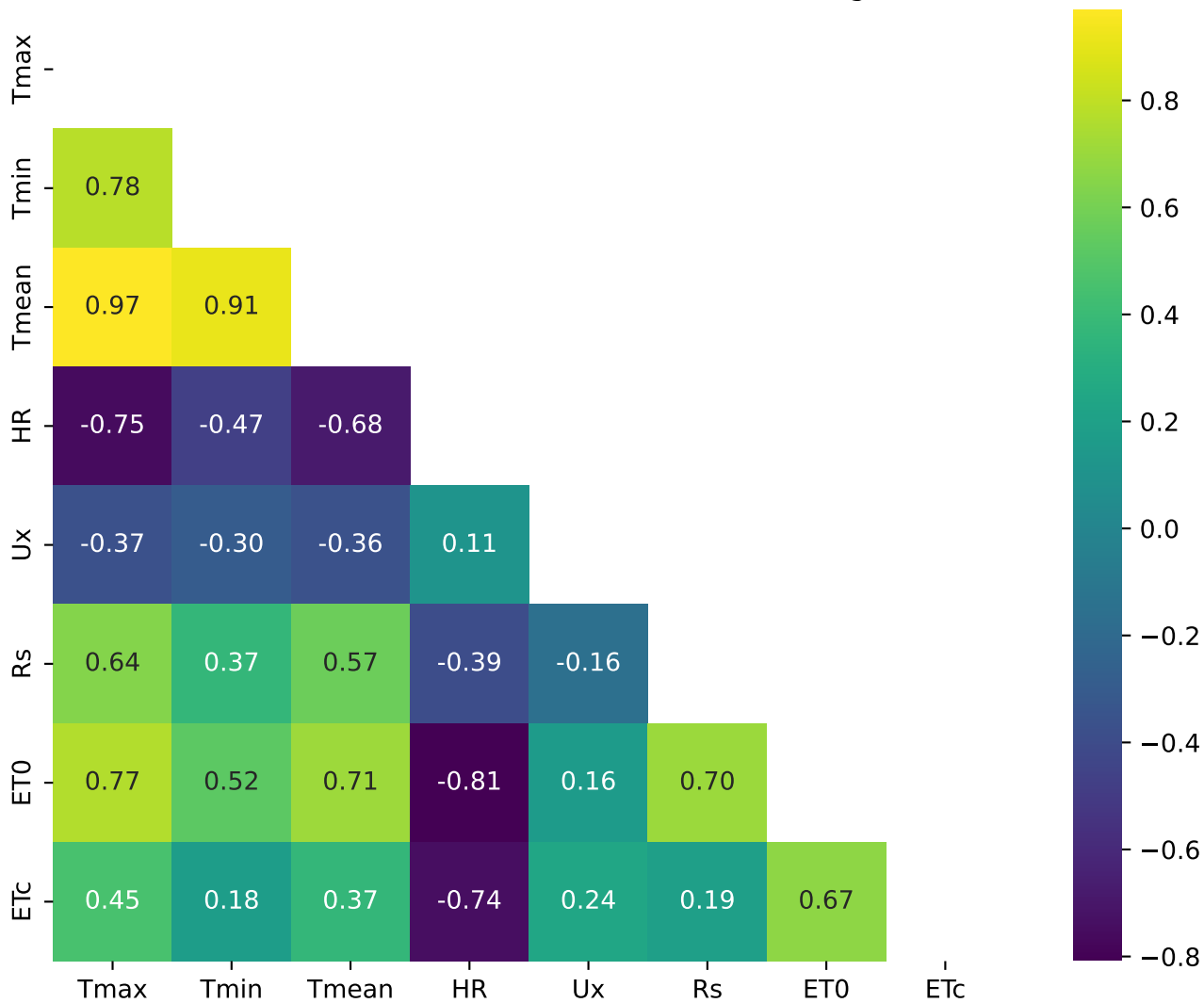
Importancias: {'Tmax': 0.2579337496141932, 'Tmin': 0.02325979620930442, 'HR': 0.4769858840103259, 'Ux': 0.12502399472333806, 'Rs': 0.11679657544283856}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 23.784773 | 10.905455 | 41.124091 | 1.639318 | 13.851818 | 3.300927 | 2.867188 |
| 1 | 13.588235 | 7.549412 | 79.966471 | 3.307647 | 9.790000 | 1.704846 | 1.378750 |
| 2 | 22.304375 | 9.195000 | 31.816875 | 3.633750 | 14.881875 | 4.787475 | 4.260279 |
| 3 | 27.222500 | 13.603750 | 39.527083 | 1.700833 | 18.844583 | 4.496670 | 2.082535 |
| 4 | 18.248095 | 8.340238 | 69.508095 | 1.890238 | 13.660000 | 2.348658 | 1.811514 |

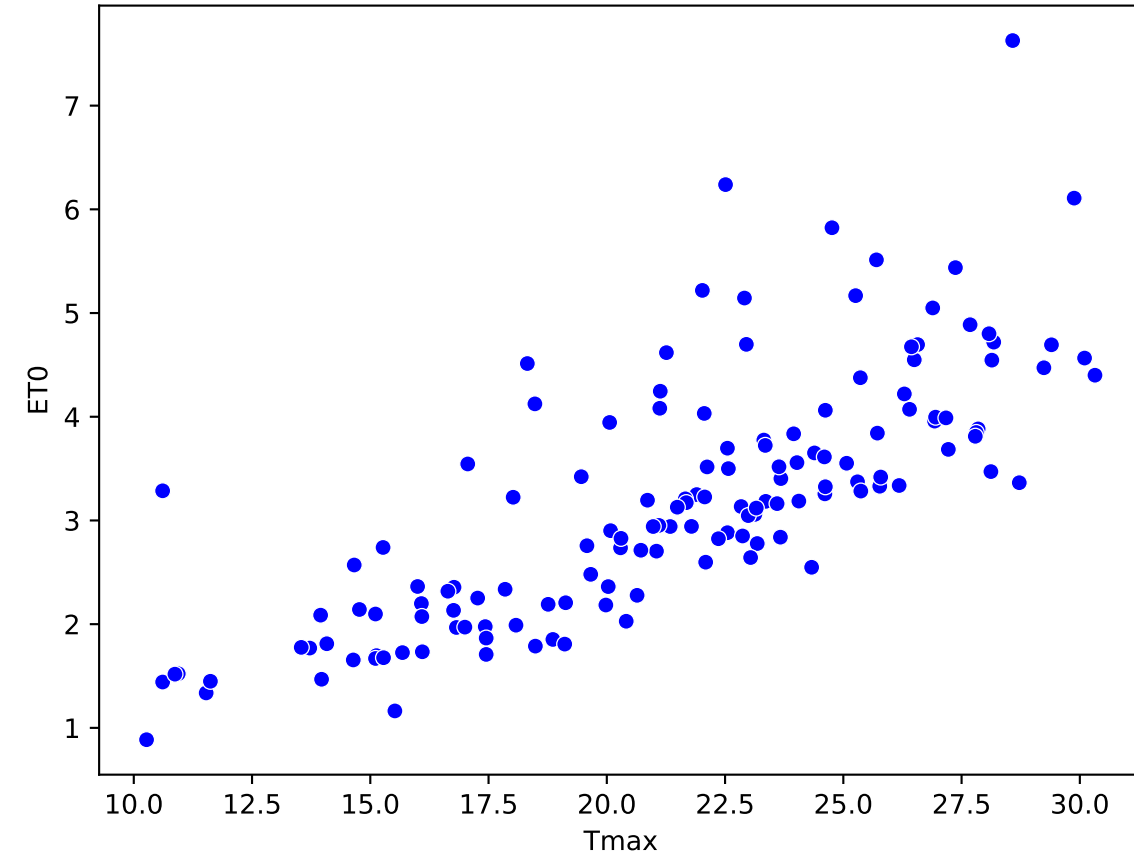
Ensenada — 2013-2014

Matriz de Correlación entre Variables Meteorológicas

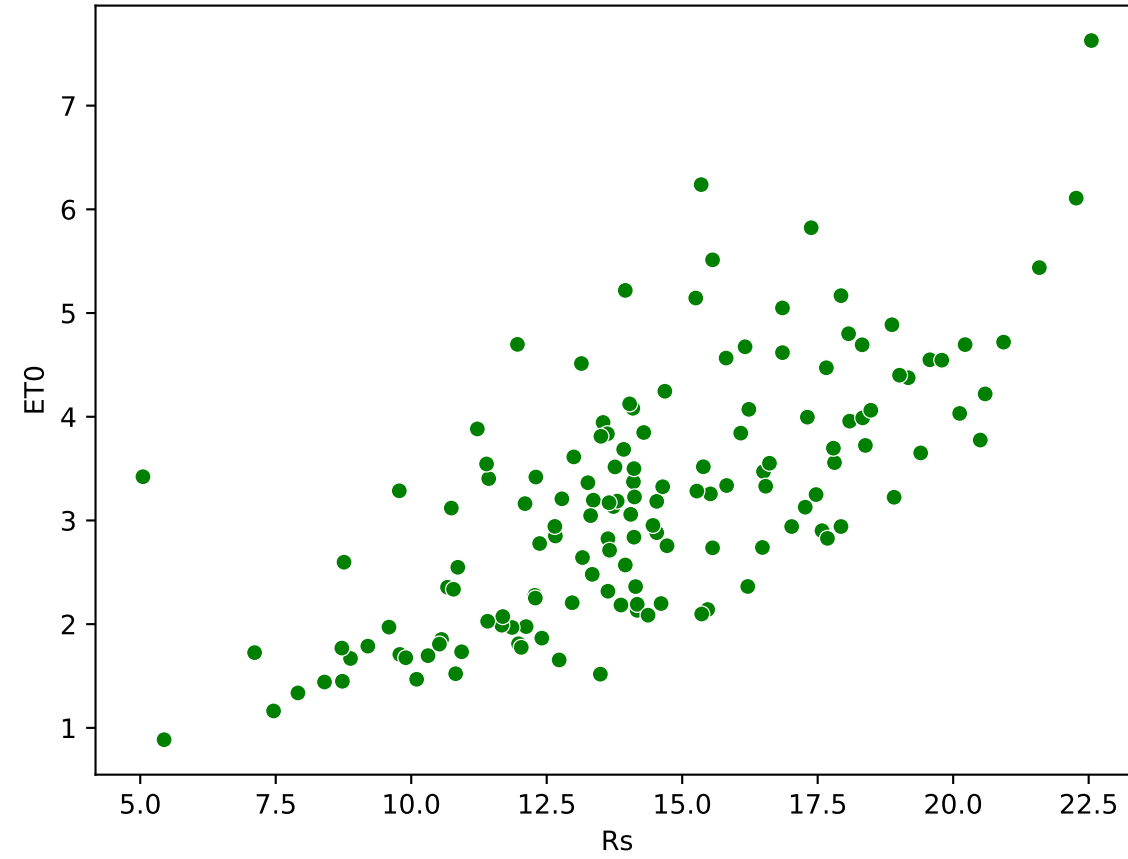


Dispersión — Ensenada (2013-2014)

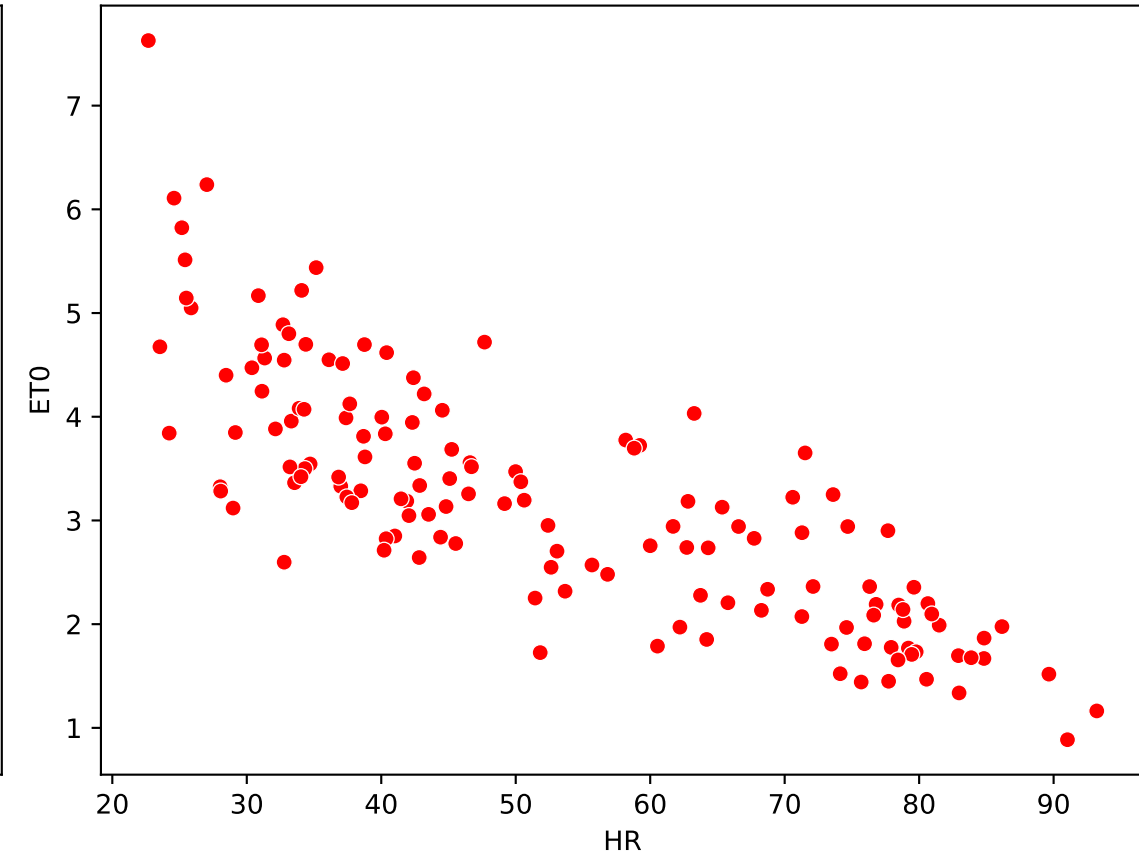
Tmax vs ET0



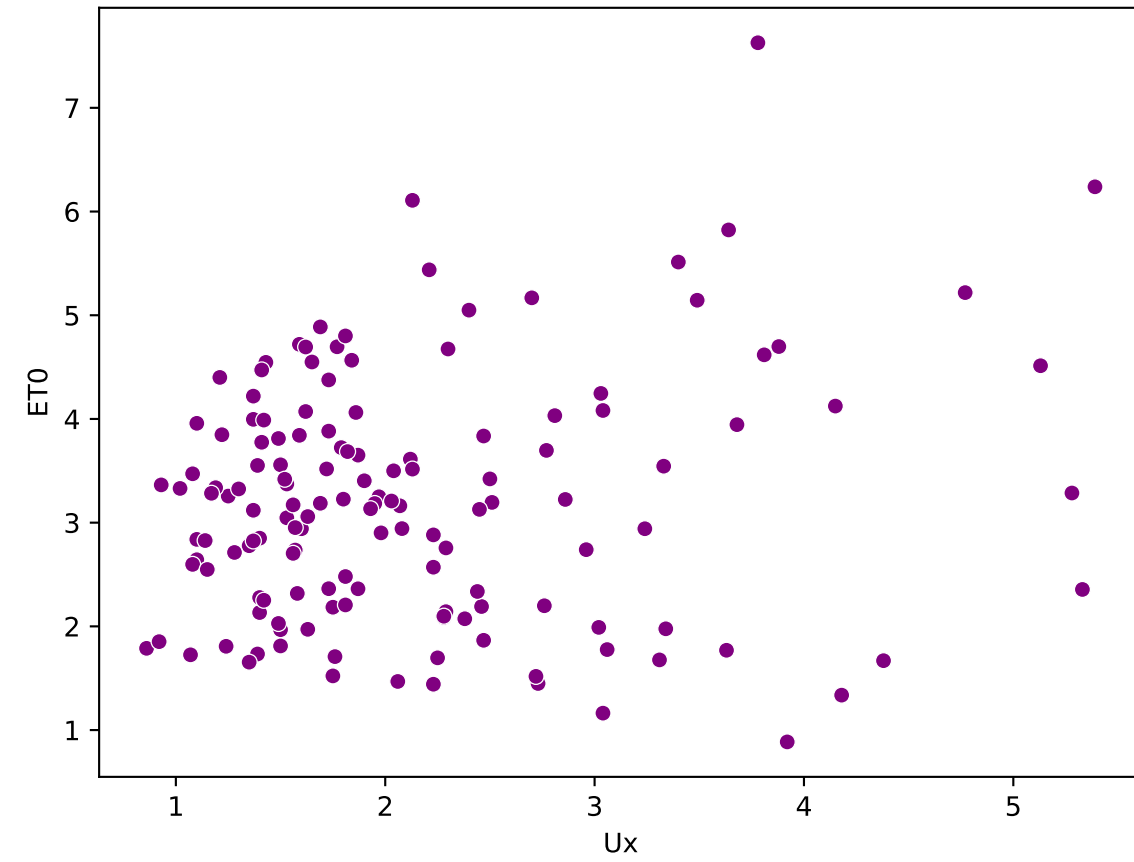
Rs vs ET0



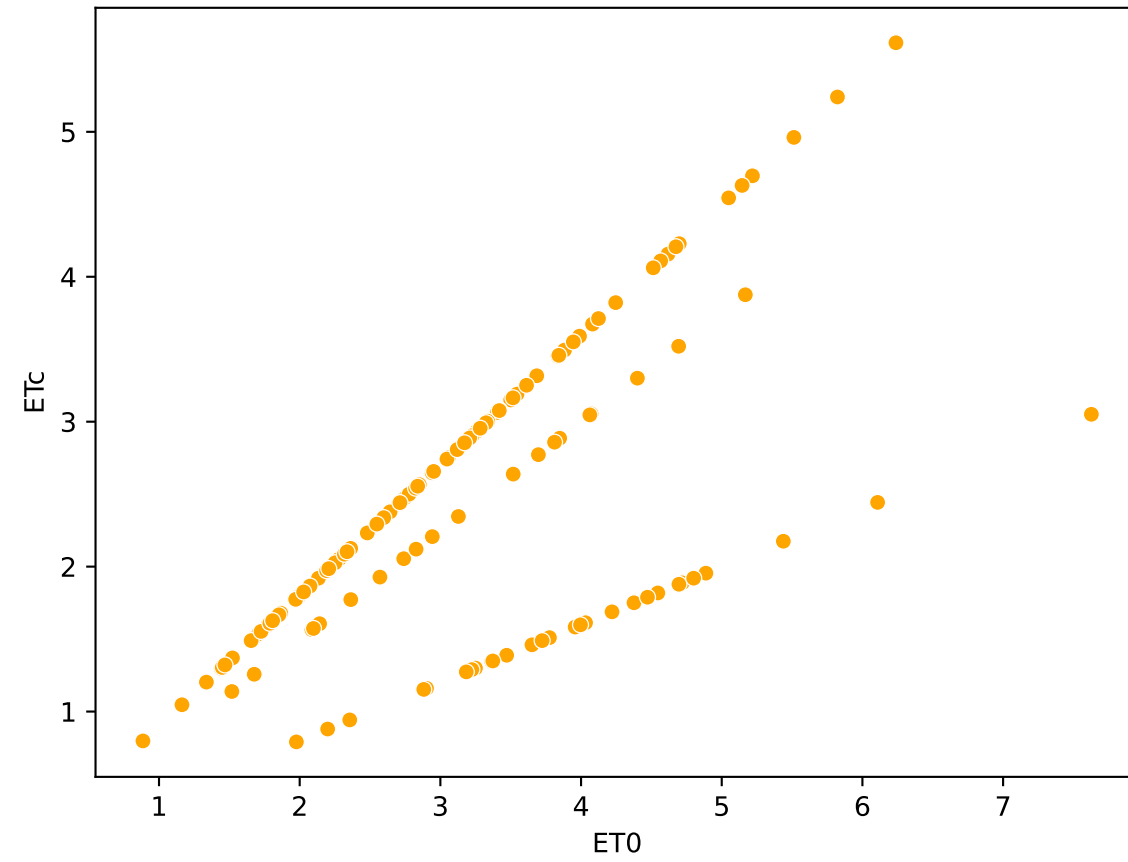
HR vs ET0



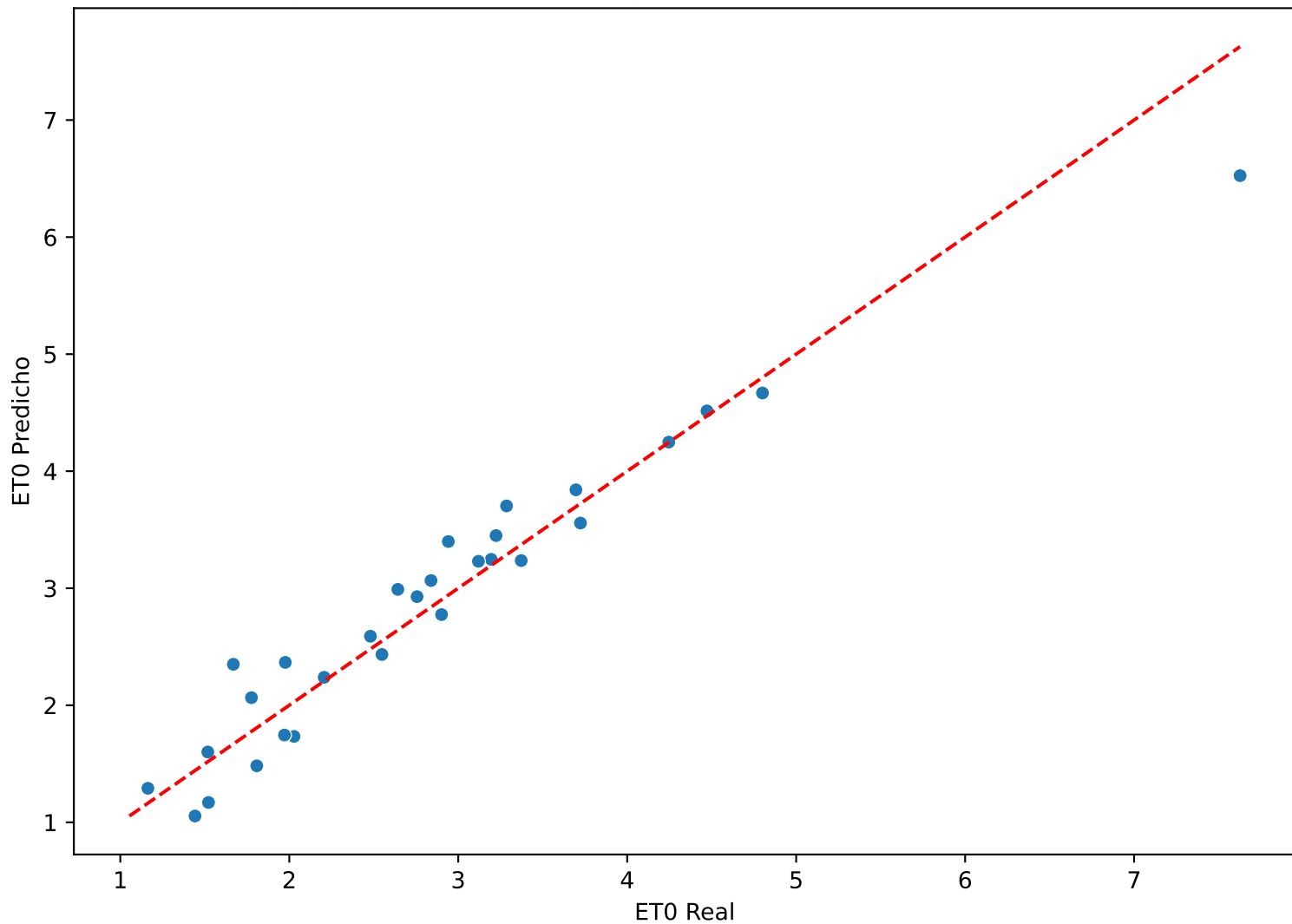
Ux vs ET0



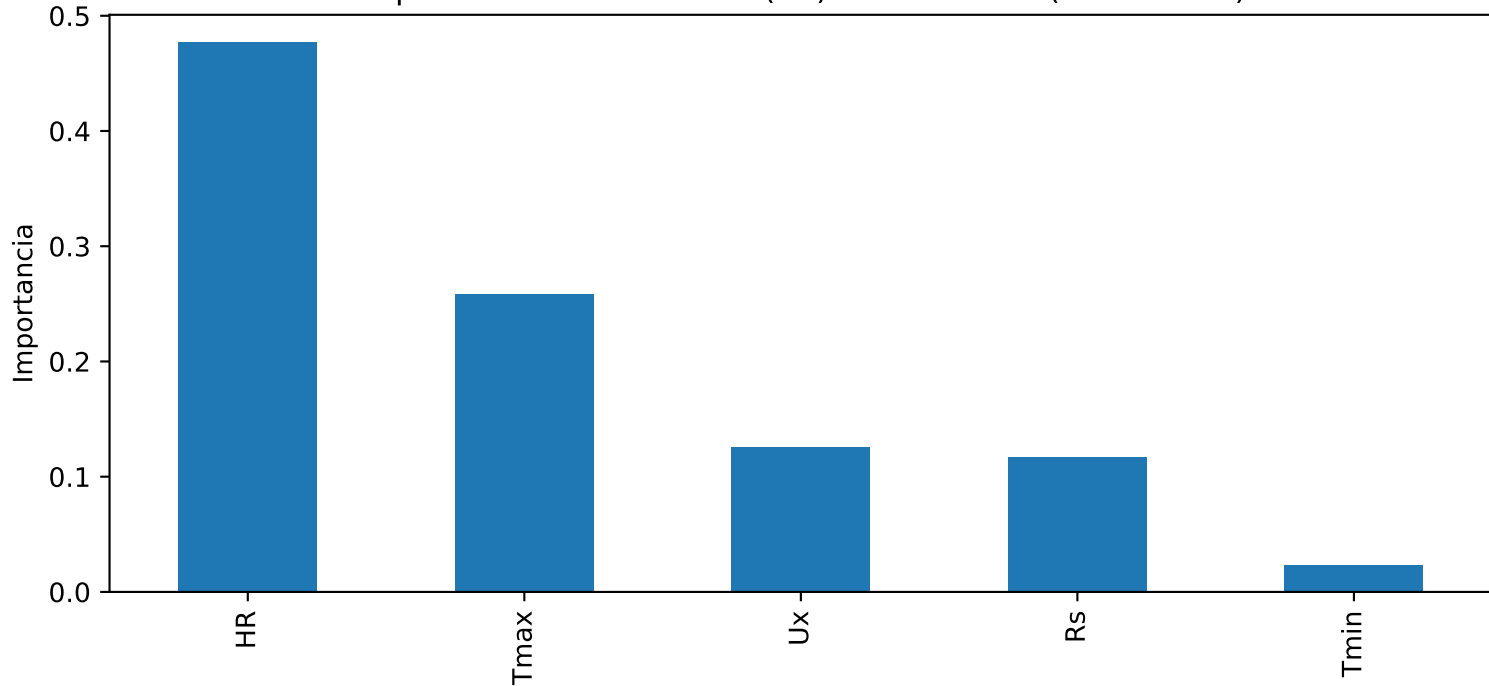
ET0 vs ETc



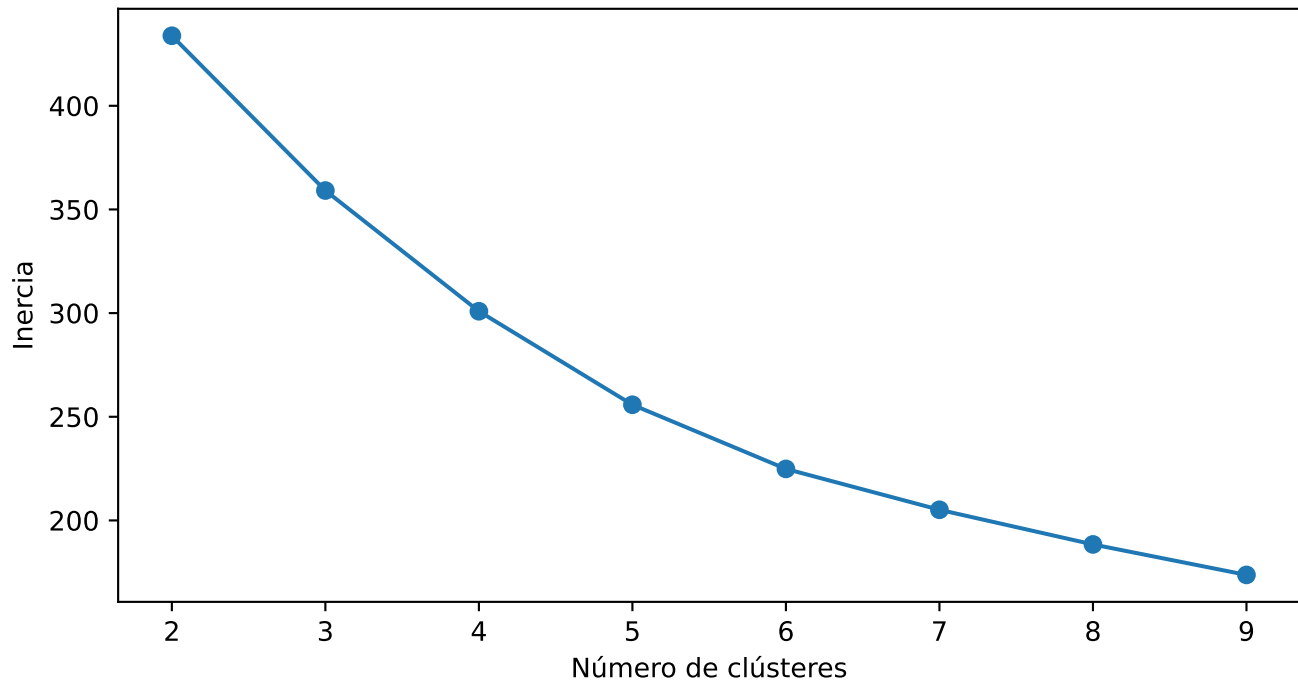
Comparación entre ET0 Real y Predicho — Ensenada (2013-2014)



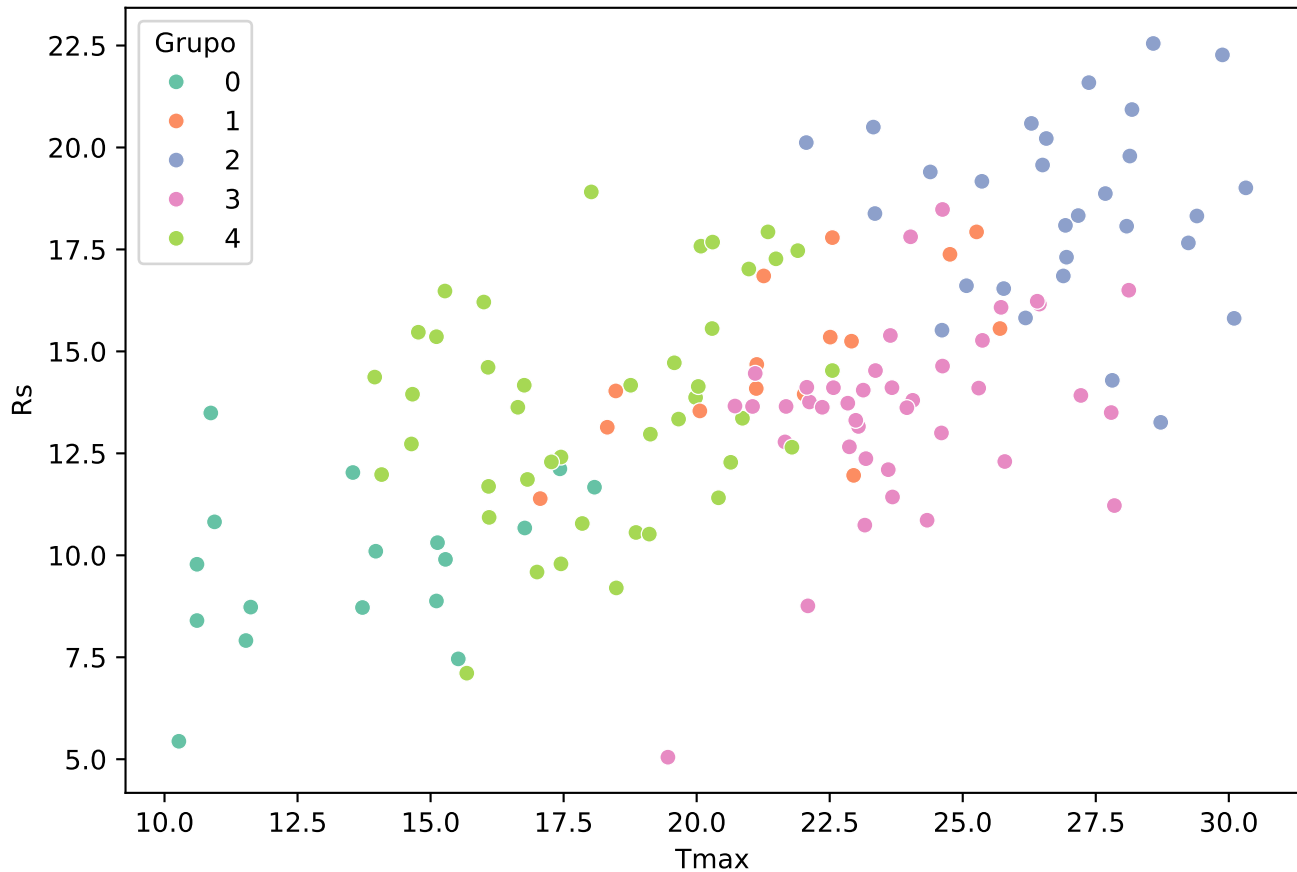
Importancia de variables (RF) — Ensenada (2013-2014)



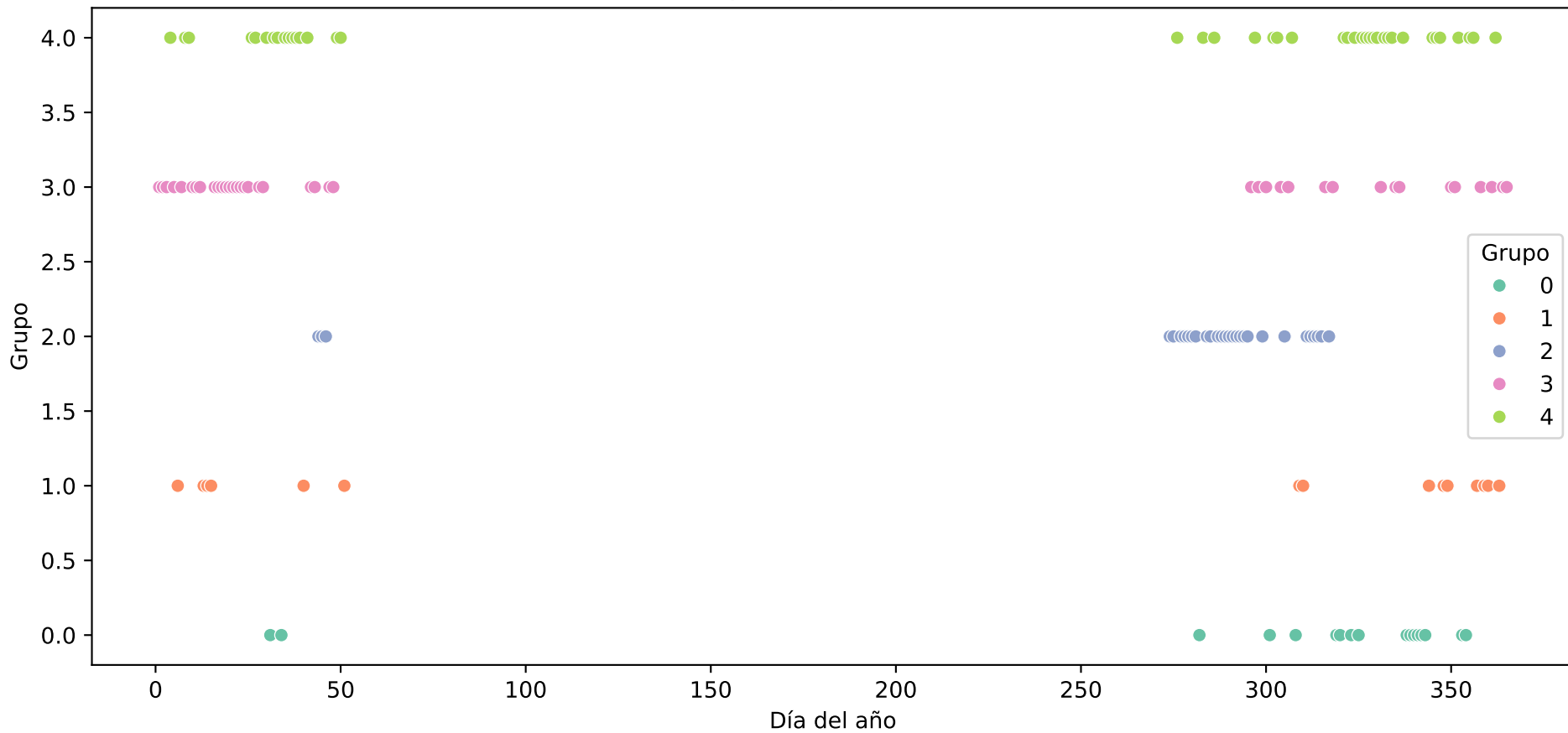
Método del codo



Clasificación de días climáticos — Ensenada (2013-2014)

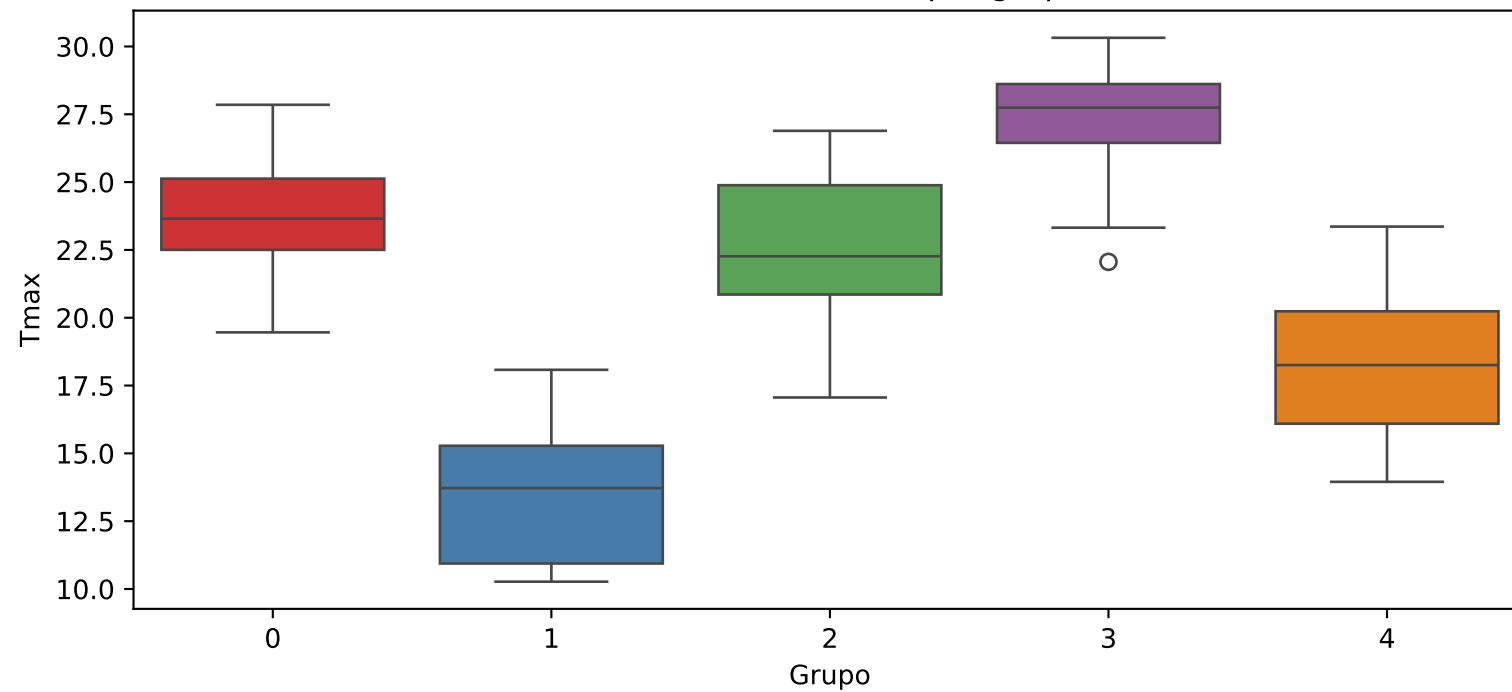


Distribución de días por grupo — Ensenada (2013-2014)

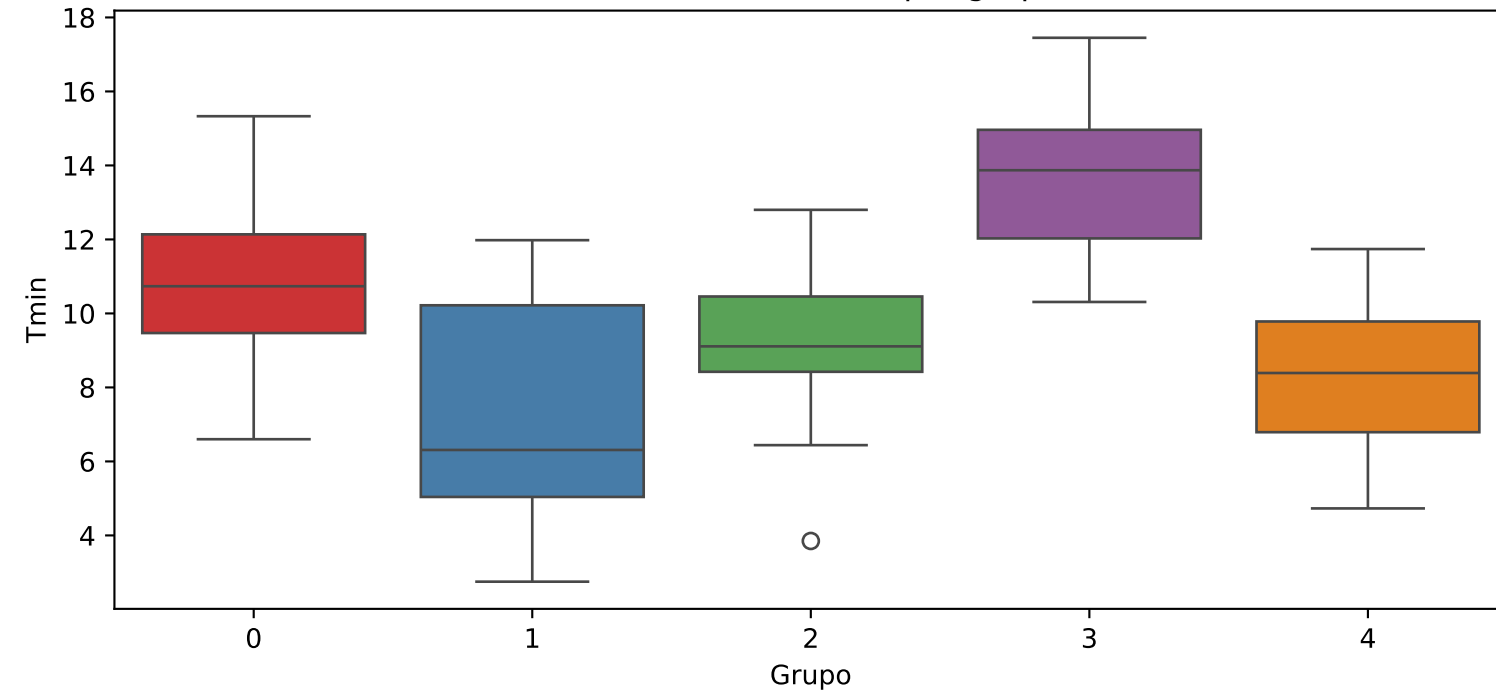


Boxplots por grupo — Ensenada (2013-2014)

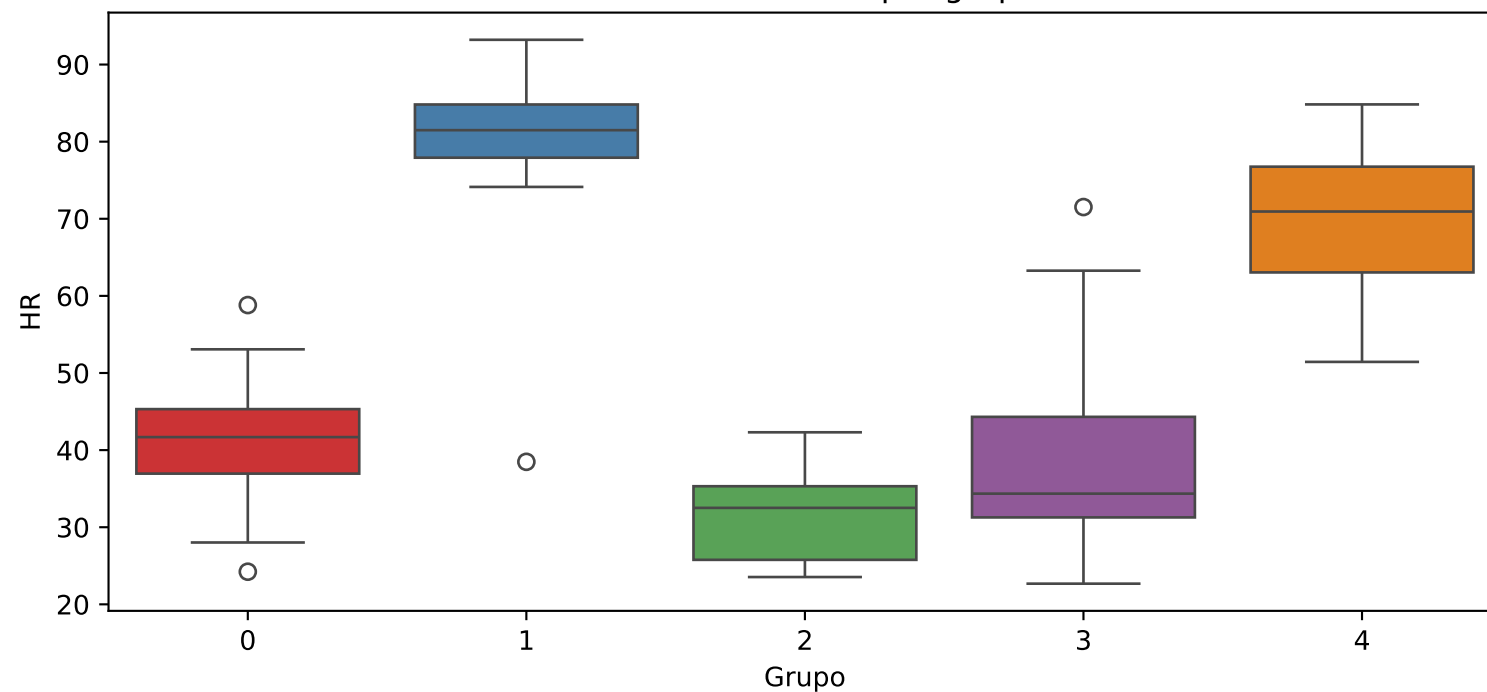
Distribución de Tmax por grupo



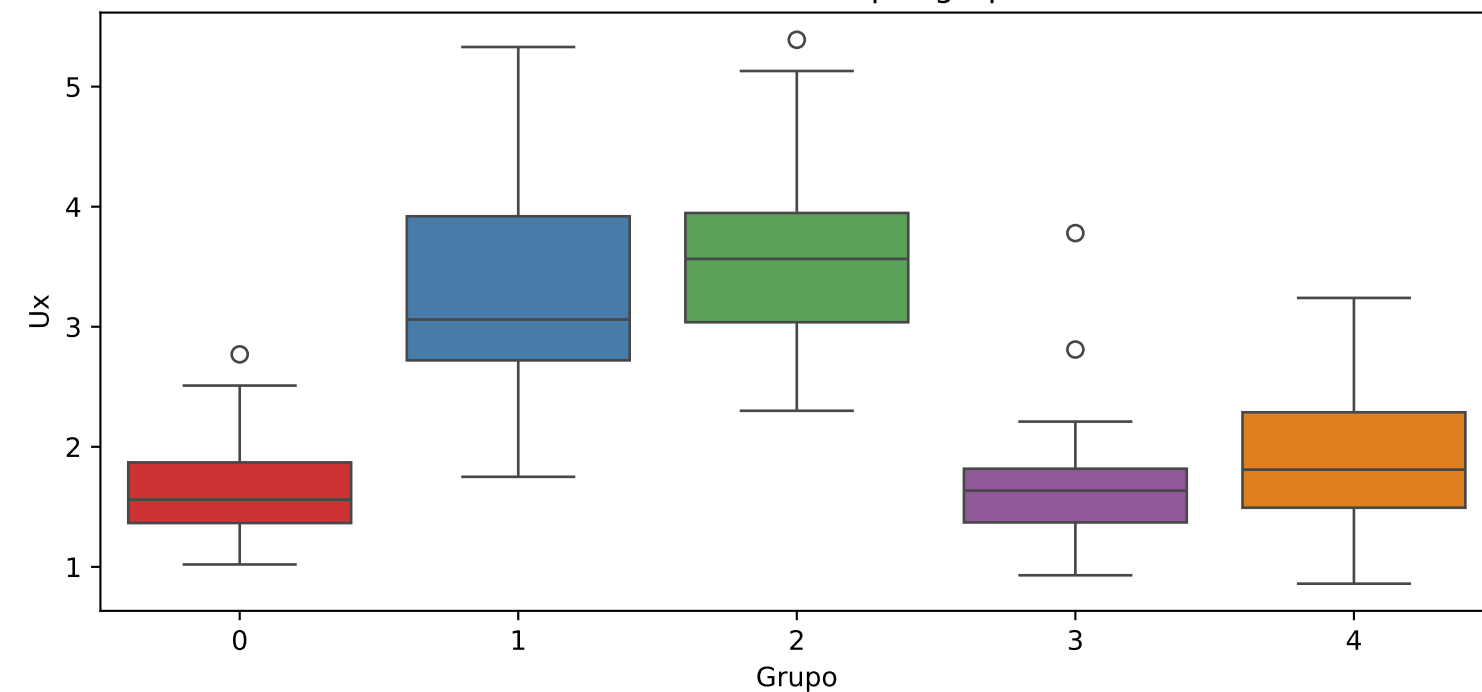
Distribución de Tmin por grupo



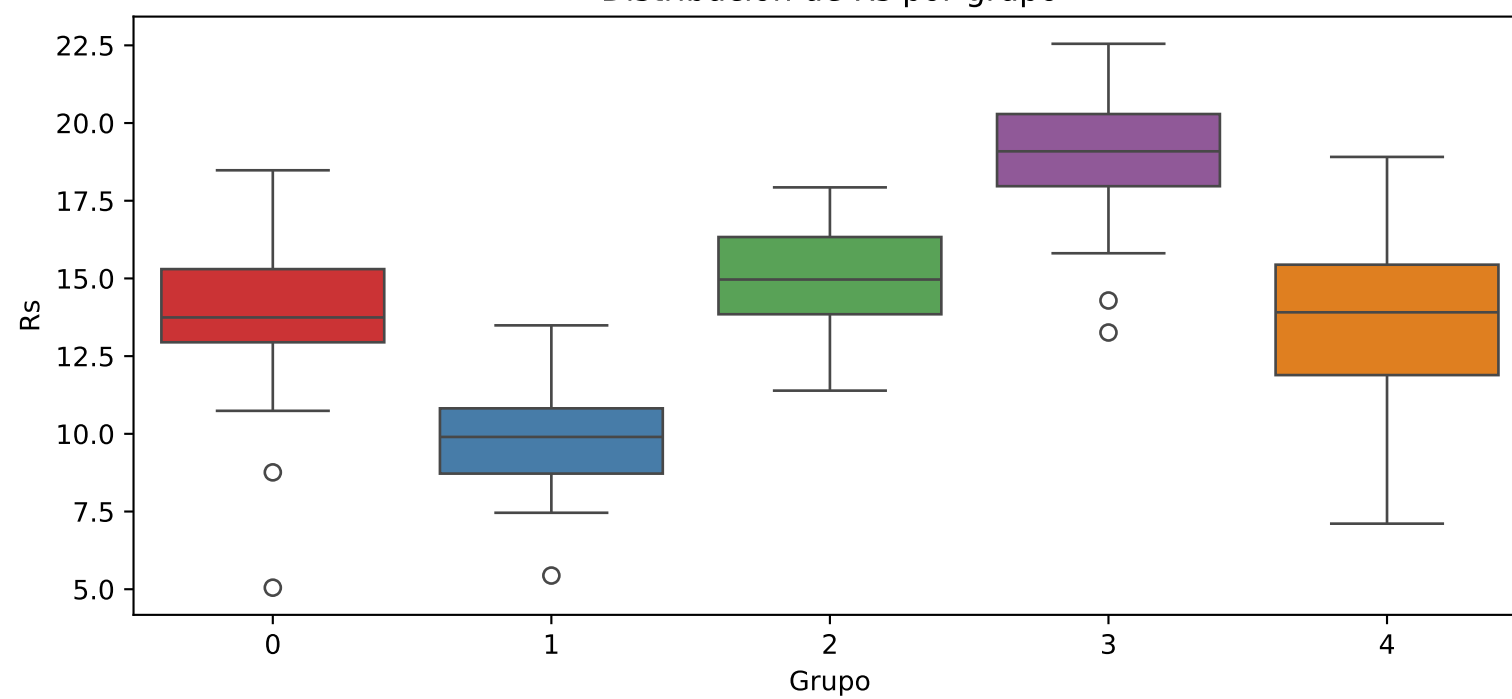
Distribución de HR por grupo



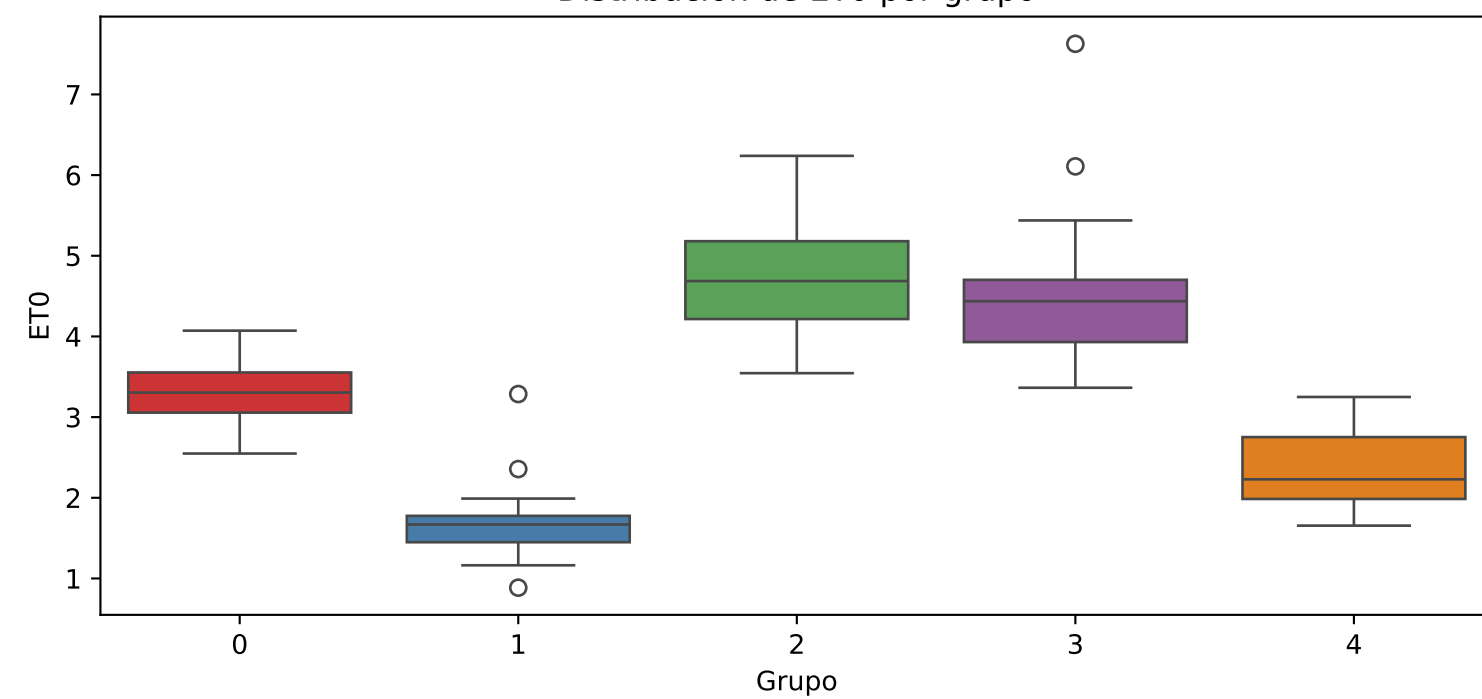
Distribución de Ux por grupo



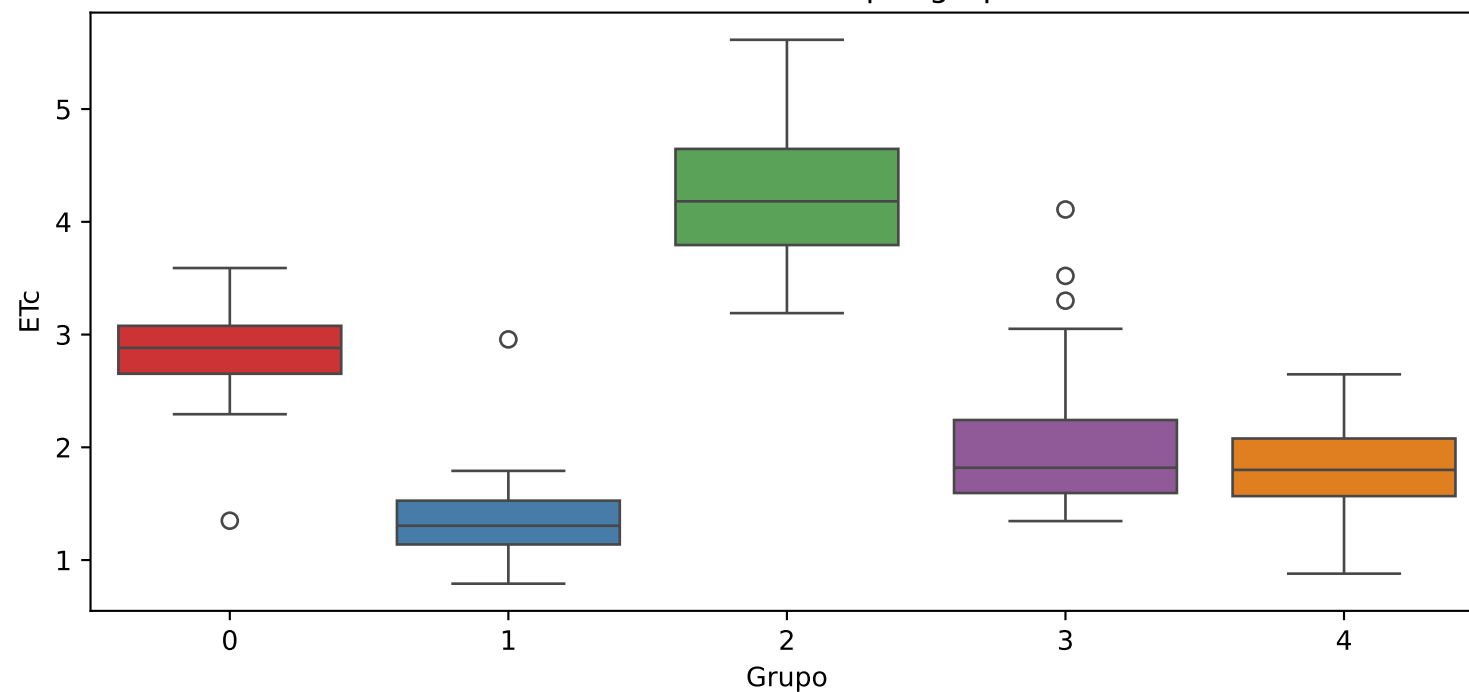
Distribución de Rs por grupo



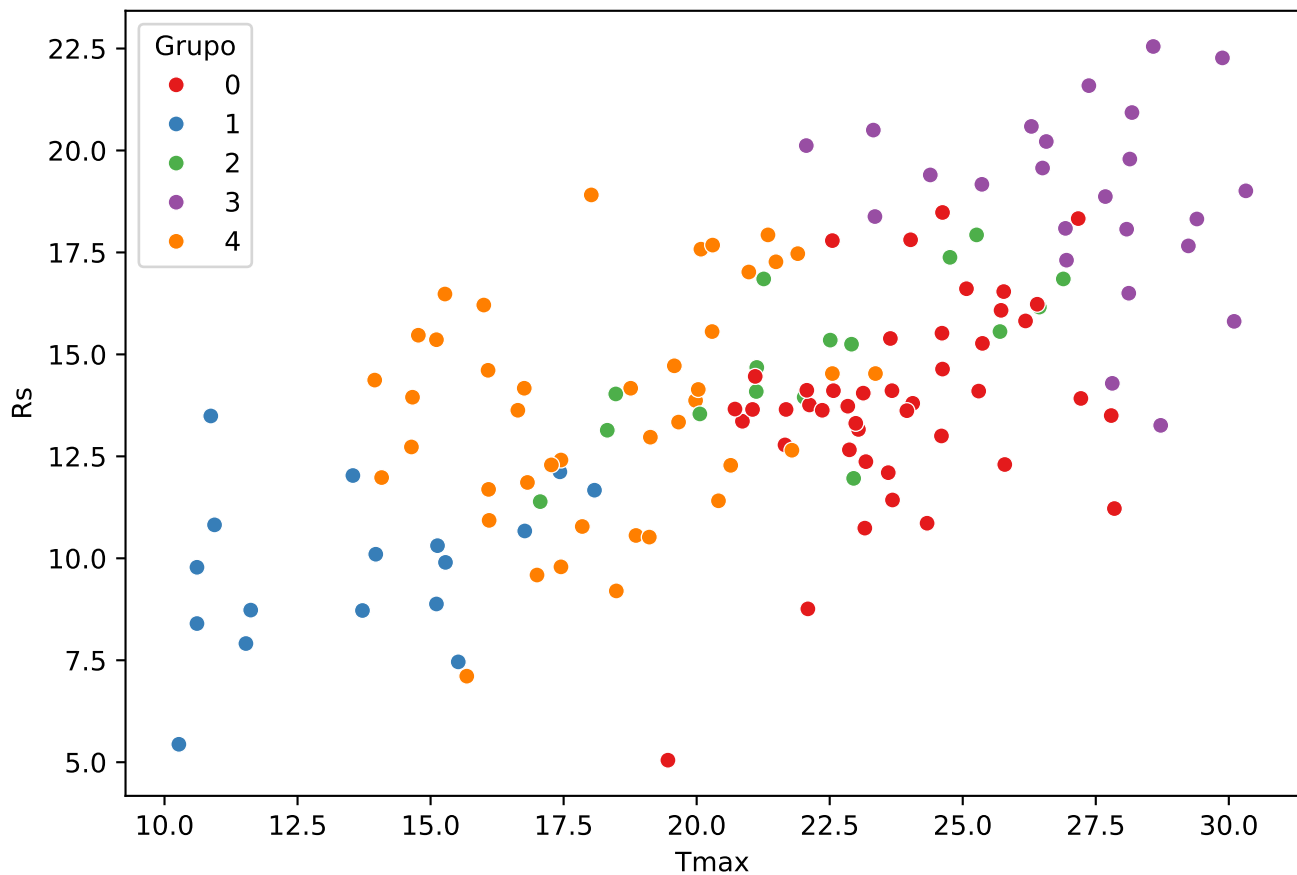
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2013-2014)



Ensenada — 2014-2015

Días del ciclo: 143

ETc total [mm]: 339.0

ETverde total [mm]: 20.0

ETazul total [mm]: 319.0

Tmax / Tmin [°C]: 34.5 / 0.3

Ensenada — 2014-2015 · Resultados y métricas

[Ensenada 2014-2015] Regresión Lineal ET0 — R^2 : 0.9688 MSE: 0.0467

[Ensenada 2014-2015] Random Forest ET0 — R^2 : 0.9655 MSE: 0.0518

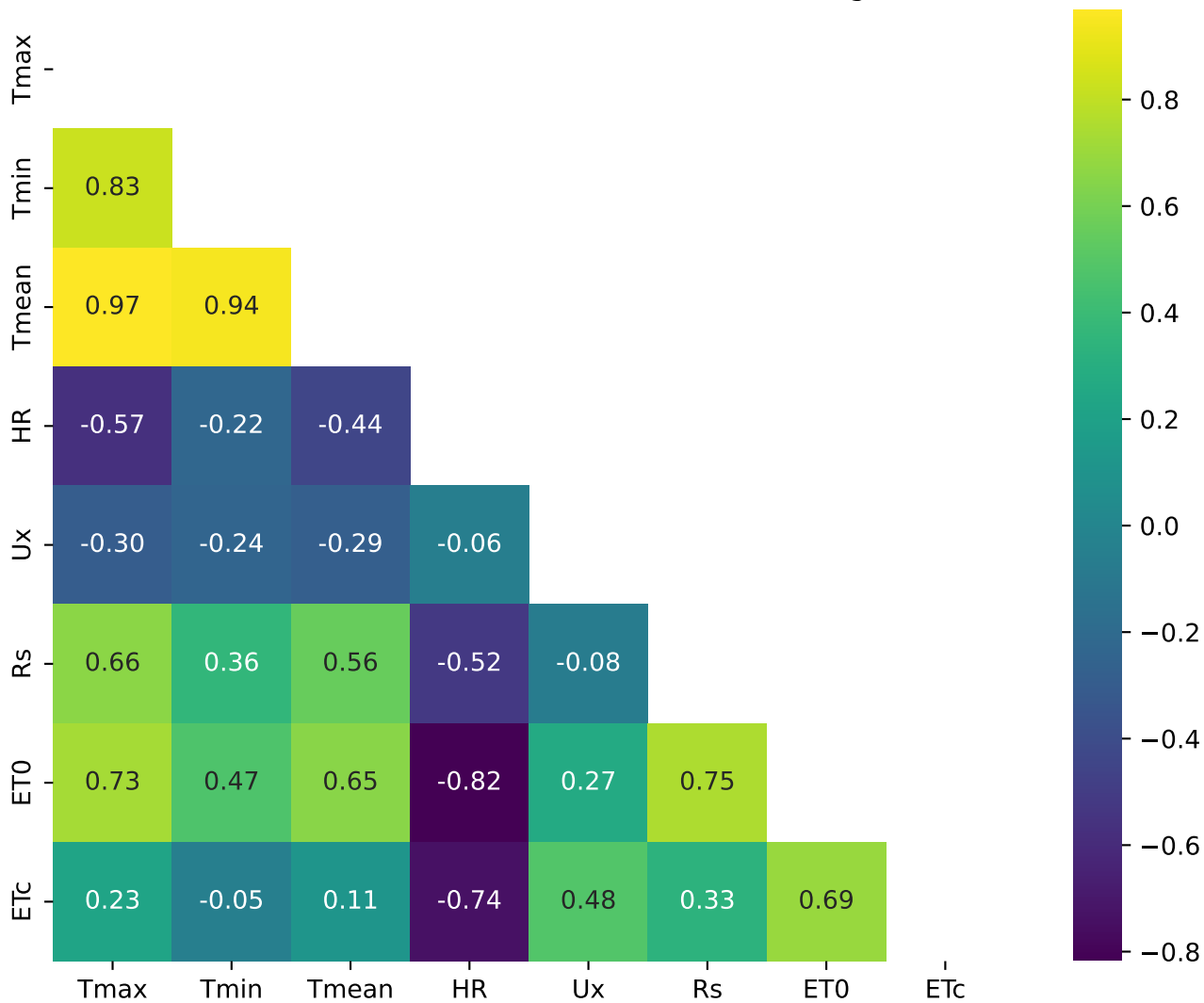
Importancias: {'Tmax': 0.16327842239325954, 'Tmin': 0.021140325369421682, 'HR': 0.40452854932850535, 'Ux': 0.0667606600247405, 'Rs': 0.3442920428840727}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 29.685600 | 16.694000 | 45.432000 | 1.567200 | 18.114000 | 4.405269 | 2.009749 |
| 1 | 22.976875 | 10.681250 | 32.969375 | 3.885625 | 16.036250 | 5.184571 | 4.514588 |
| 2 | 18.226667 | 10.414762 | 78.280238 | 2.172143 | 10.462619 | 1.891750 | 1.652830 |
| 3 | 23.657400 | 10.778200 | 53.038800 | 1.807800 | 15.252600 | 3.253268 | 2.555940 |
| 4 | 14.591000 | 3.543000 | 58.236000 | 1.973000 | 13.248000 | 2.146720 | 1.932048 |

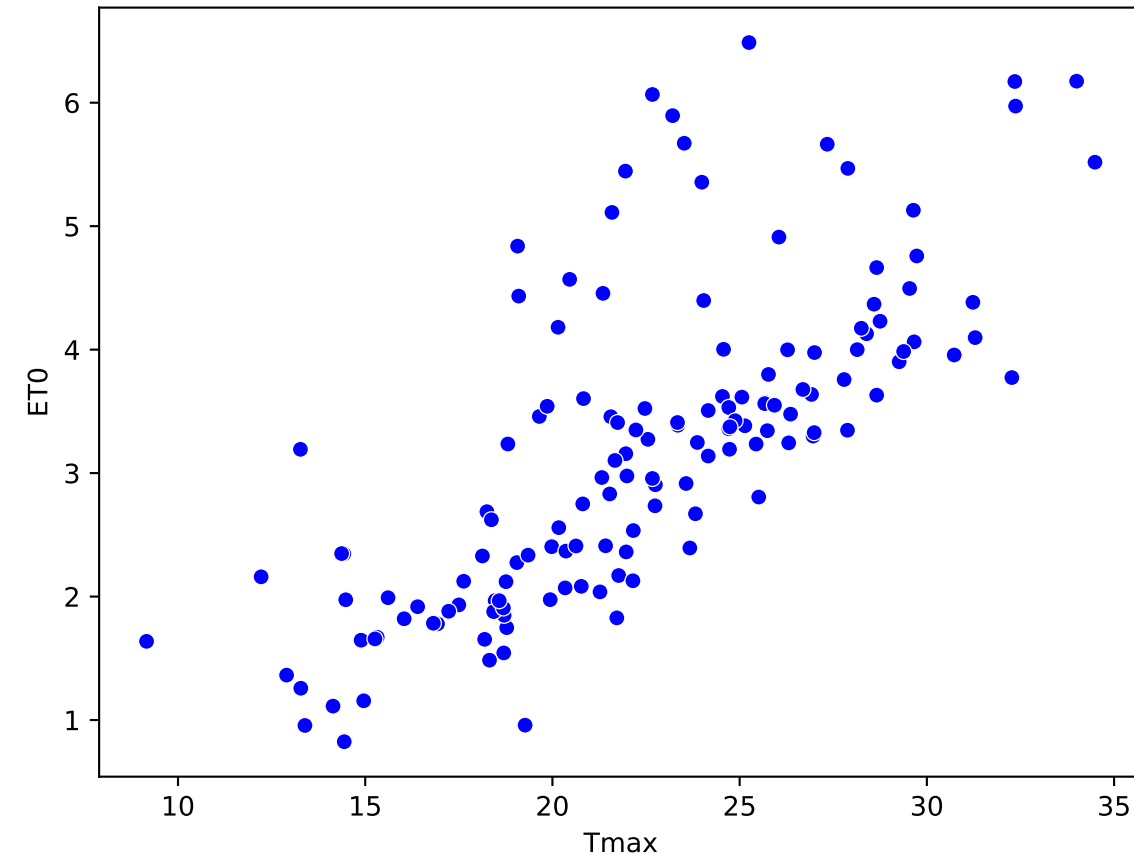
Ensenada — 2014-2015

Matriz de Correlación entre Variables Meteorológicas

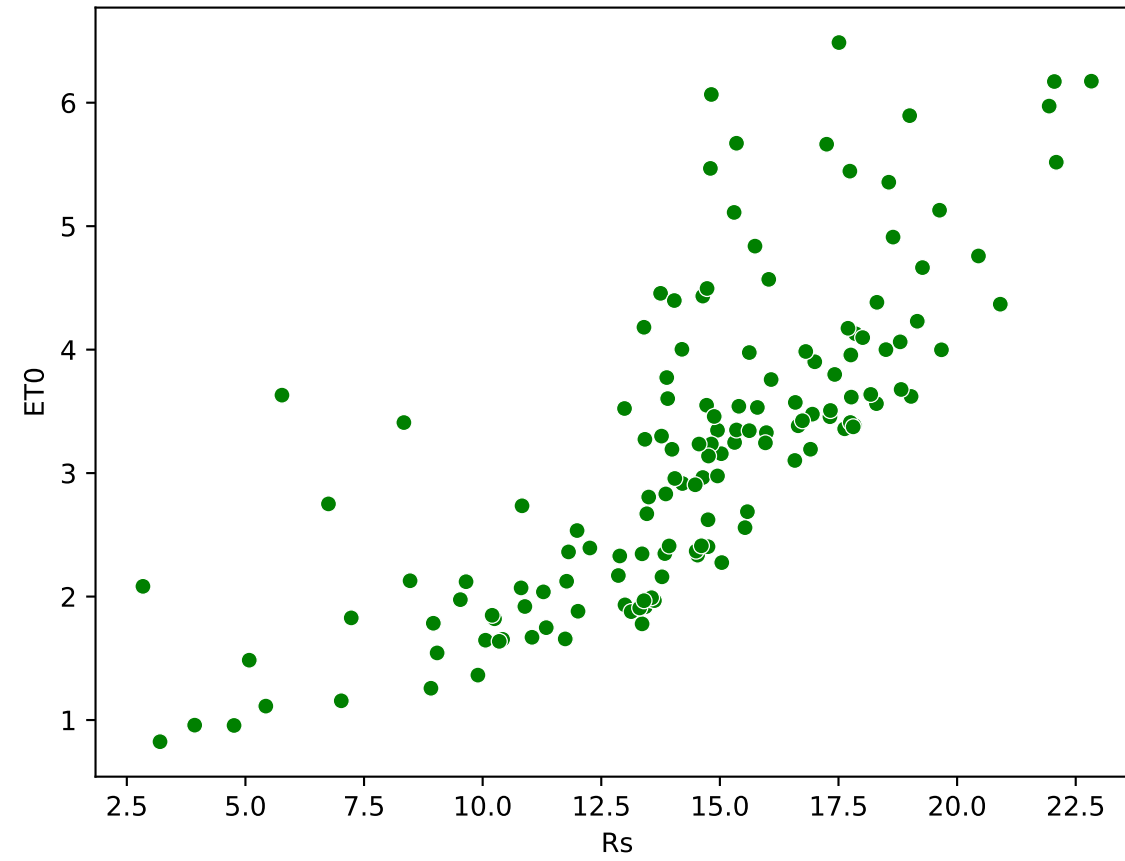


Dispersión — Ensenada (2014-2015)

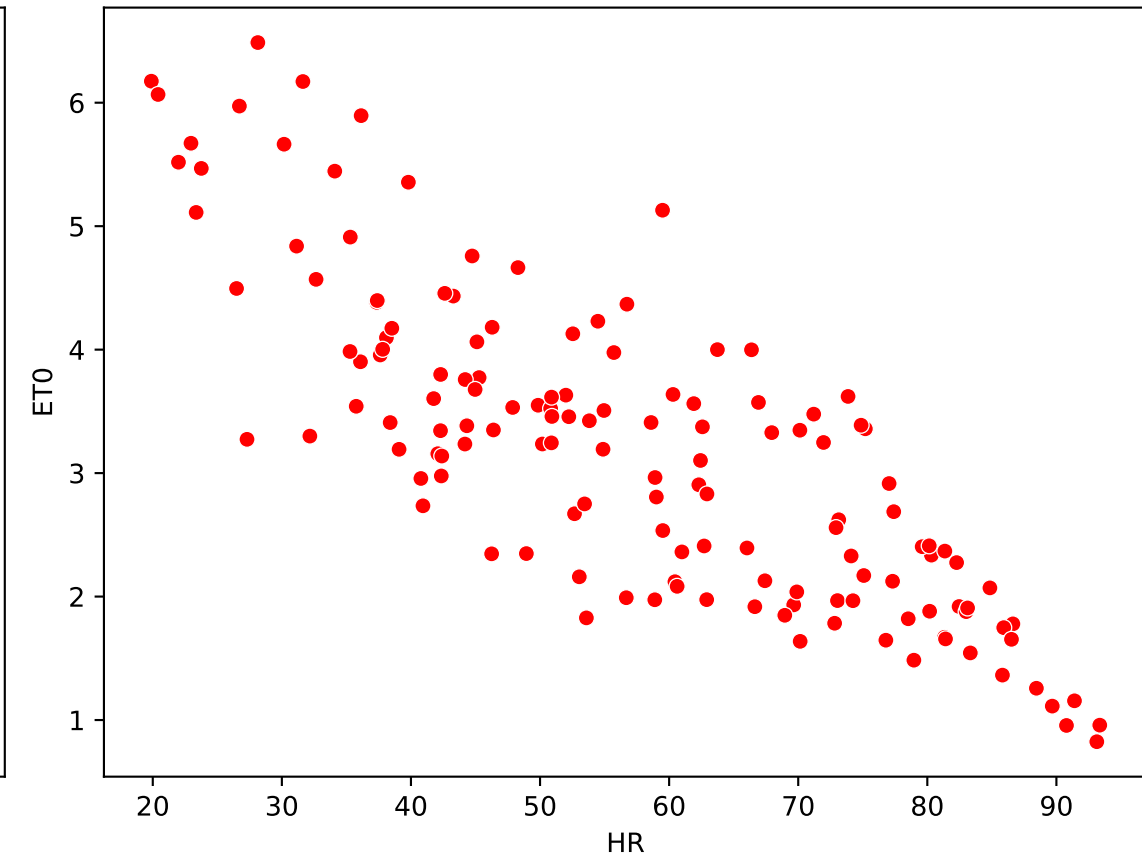
Tmax vs ET0



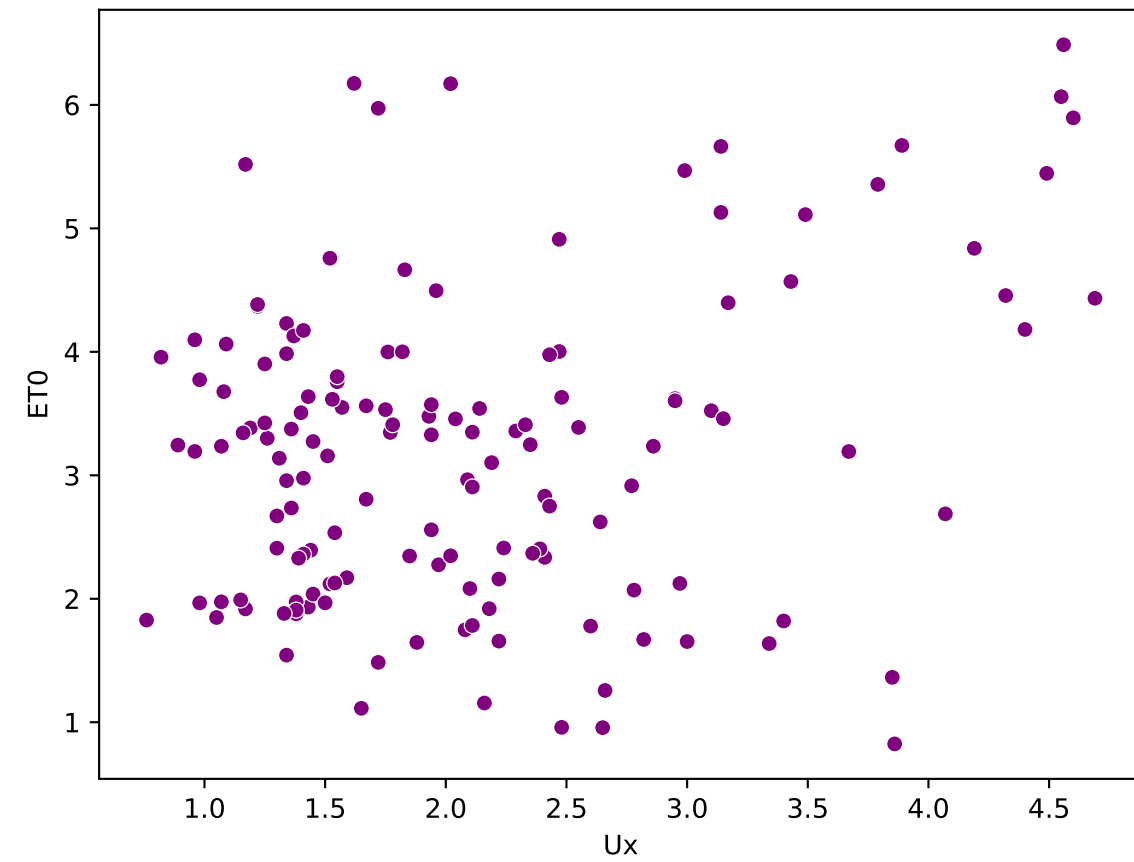
Rs vs ET0



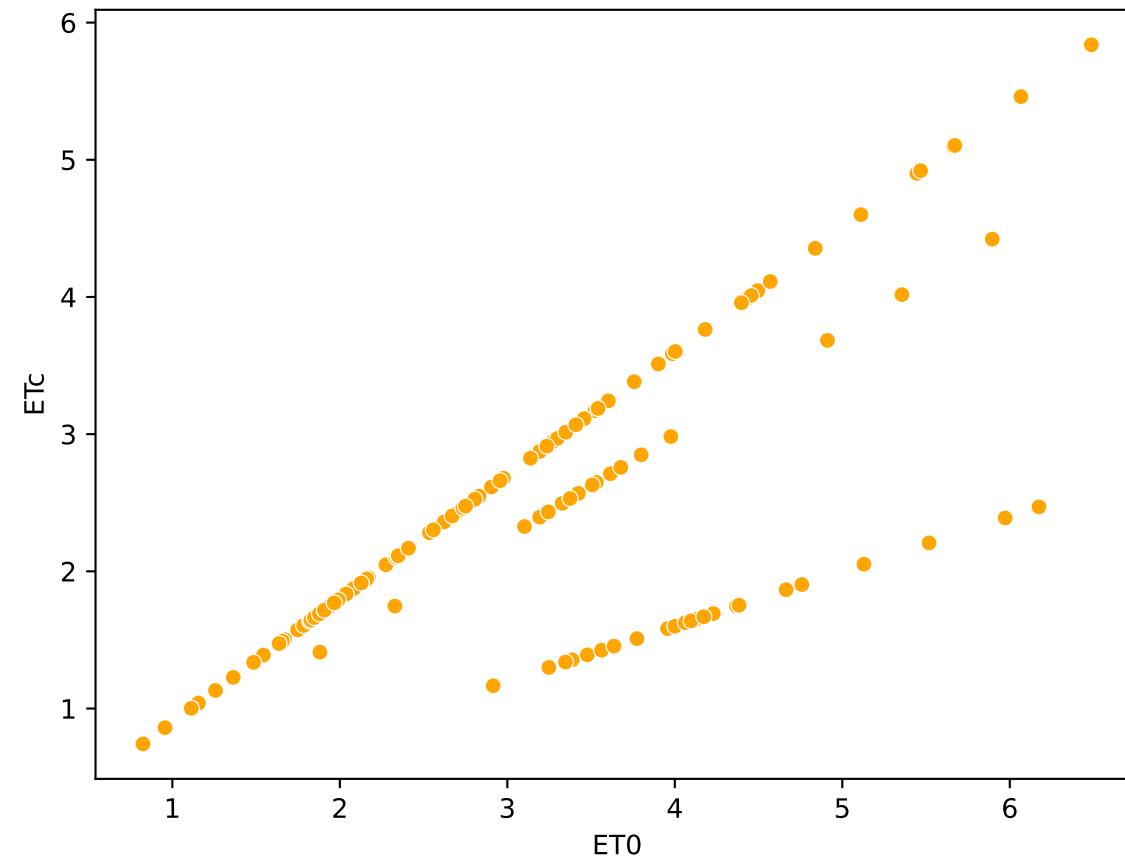
HR vs ET0



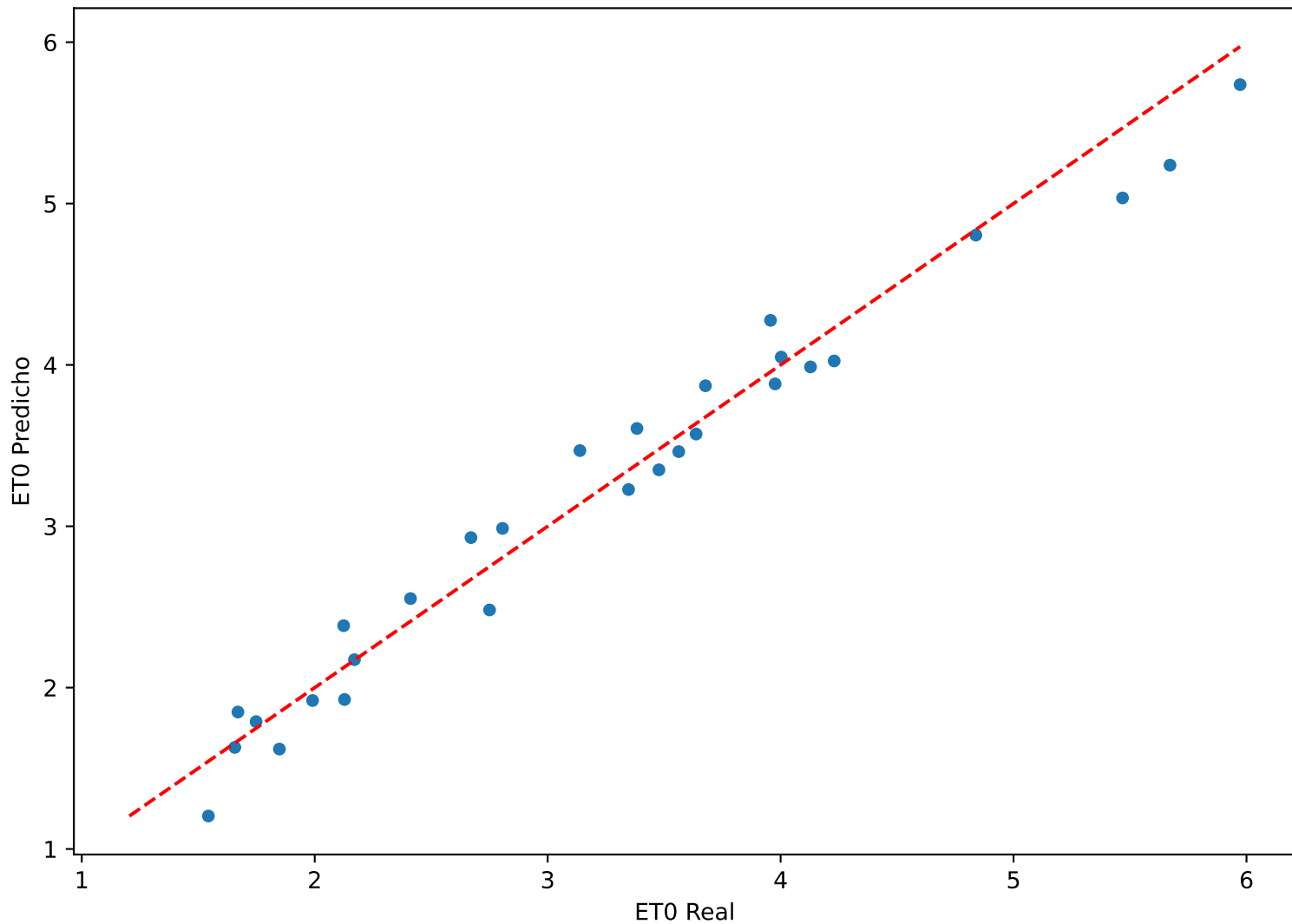
Ux vs ET0



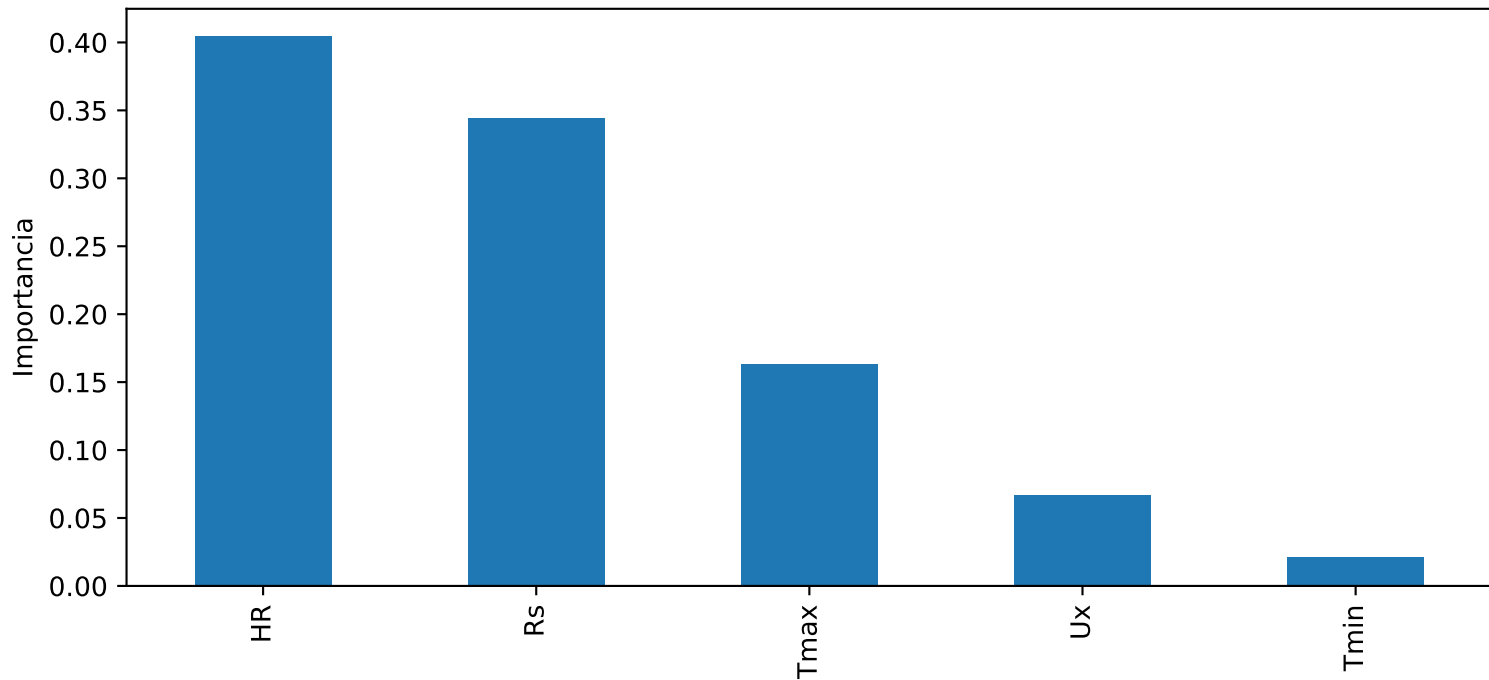
ET0 vs ETc



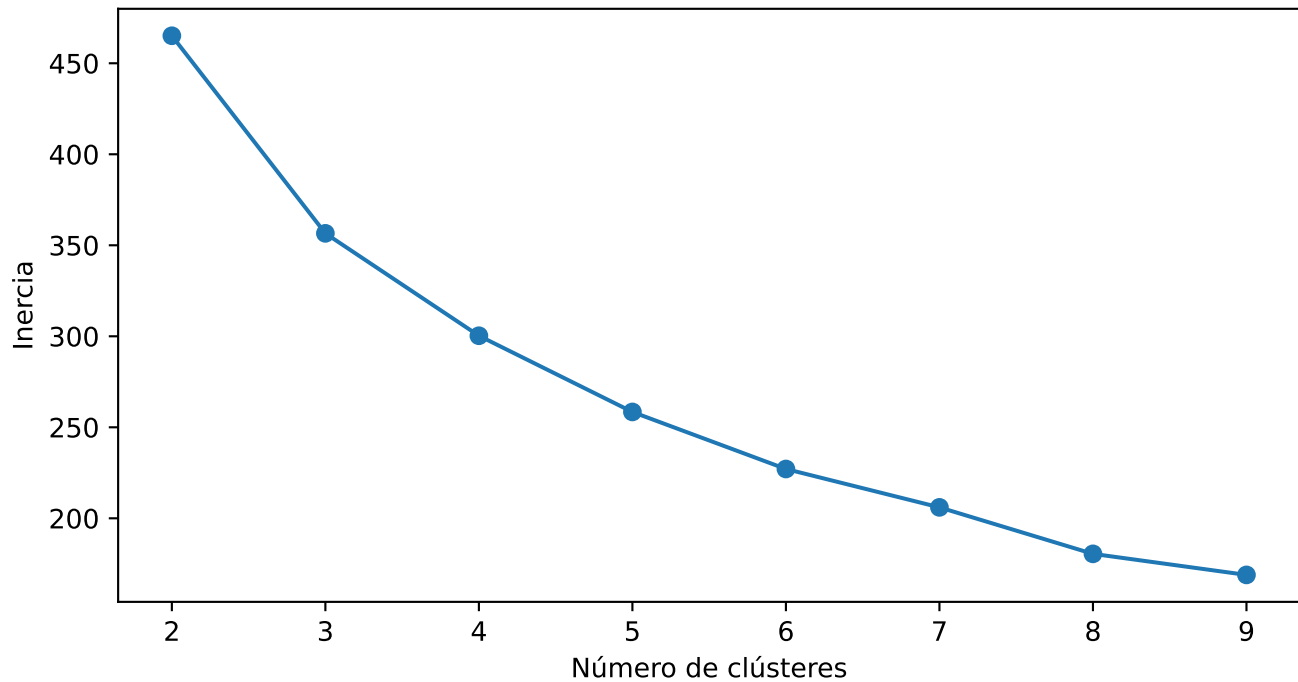
Comparación entre ET0 Real y Predicho — Ensenada (2014-2015)



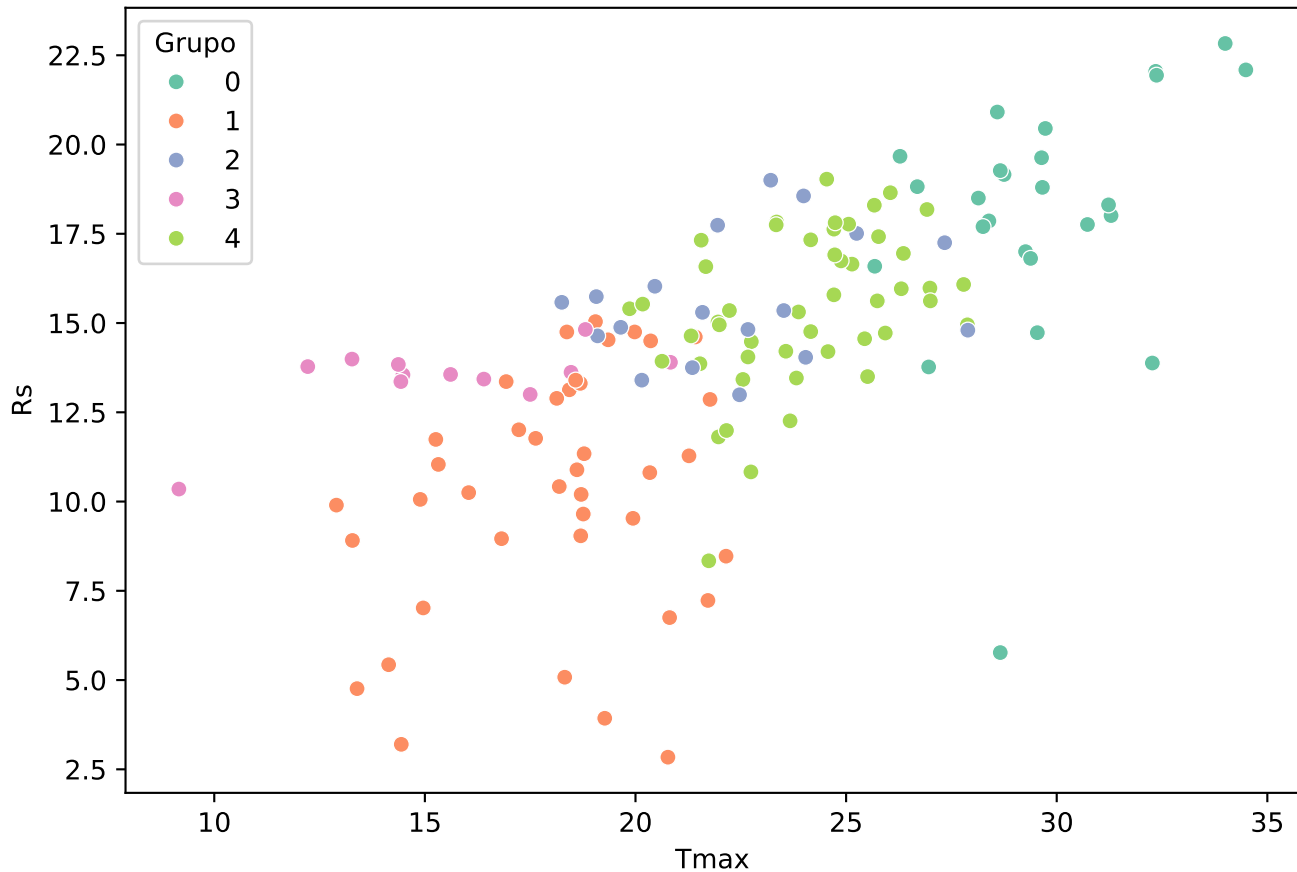
Importancia de variables (RF) — Ensenada (2014-2015)



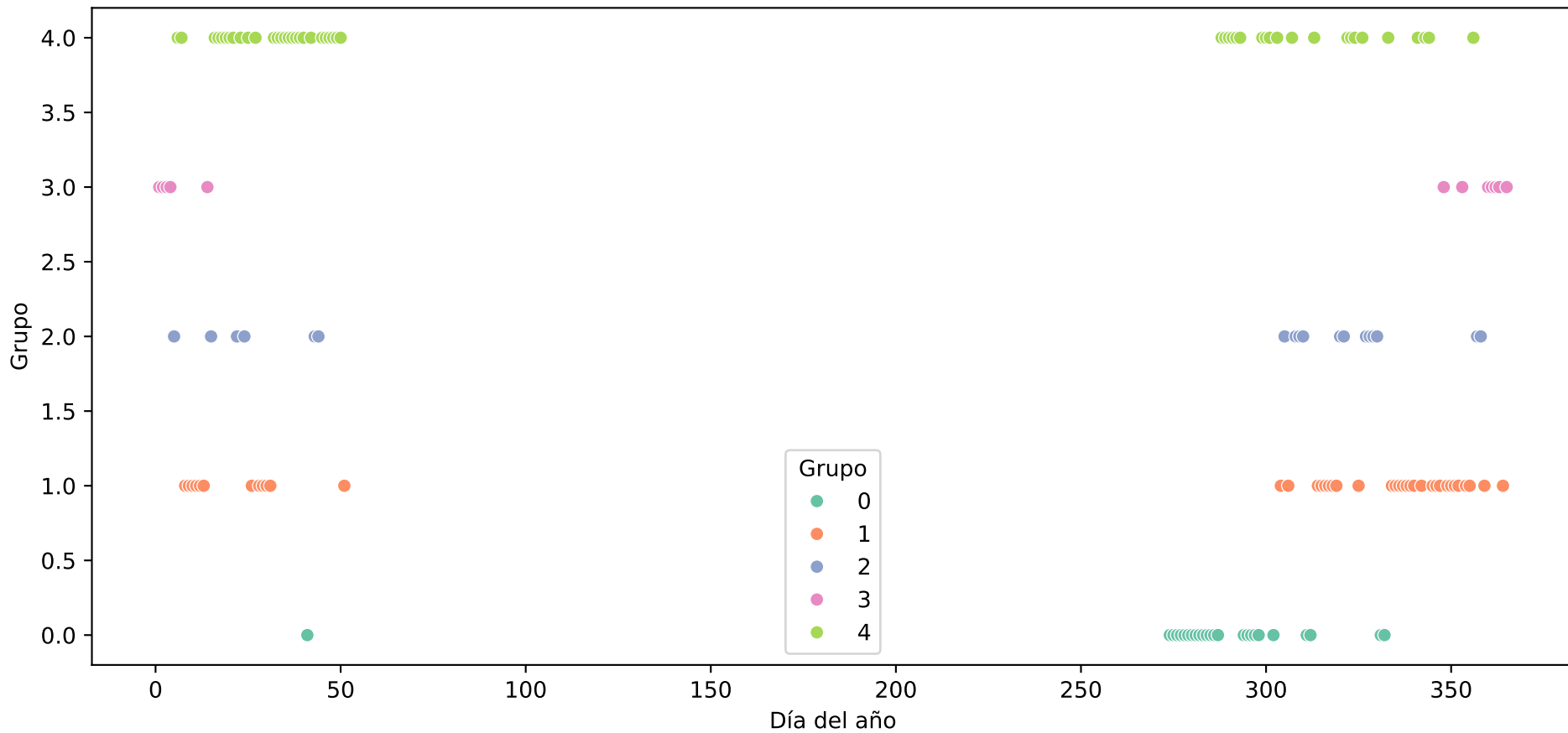
Método del codo



Clasificación de días climáticos — Ensenada (2014-2015)

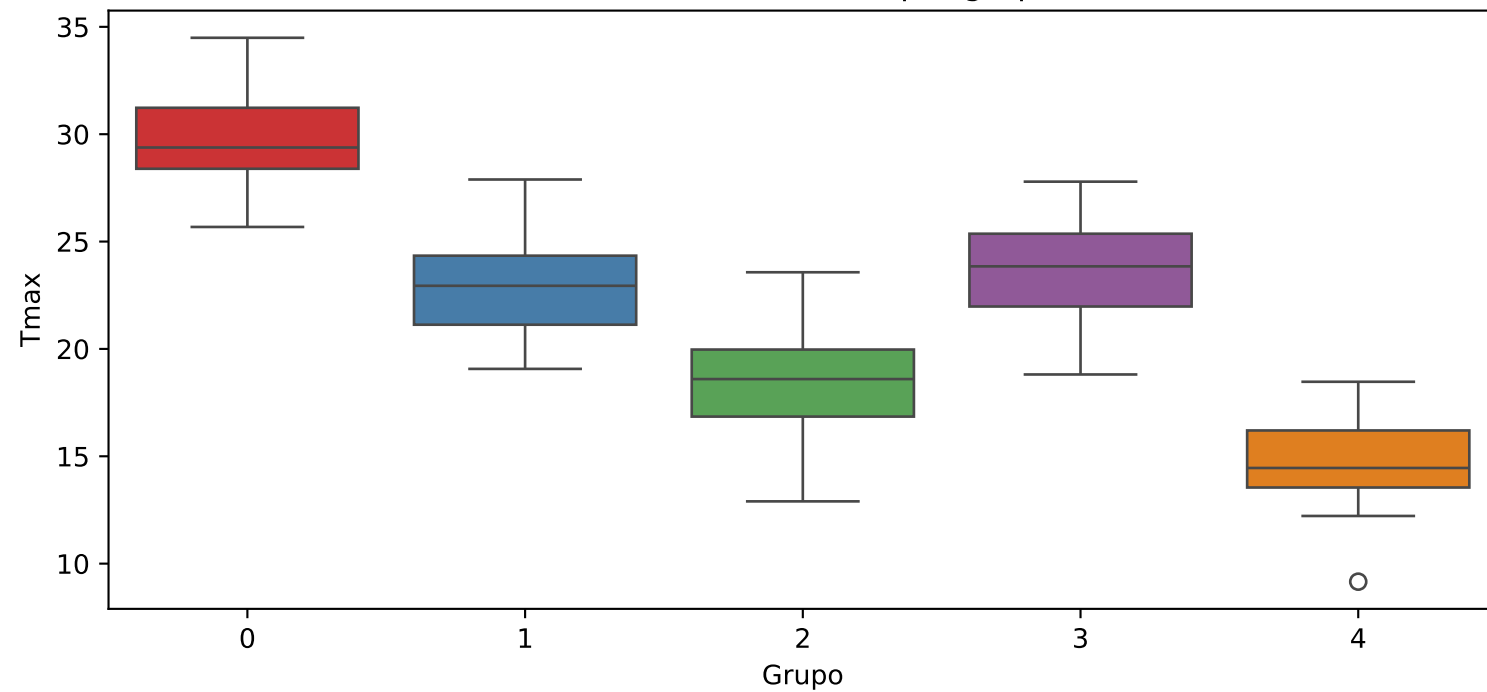


Distribución de días por grupo — Ensenada (2014-2015)

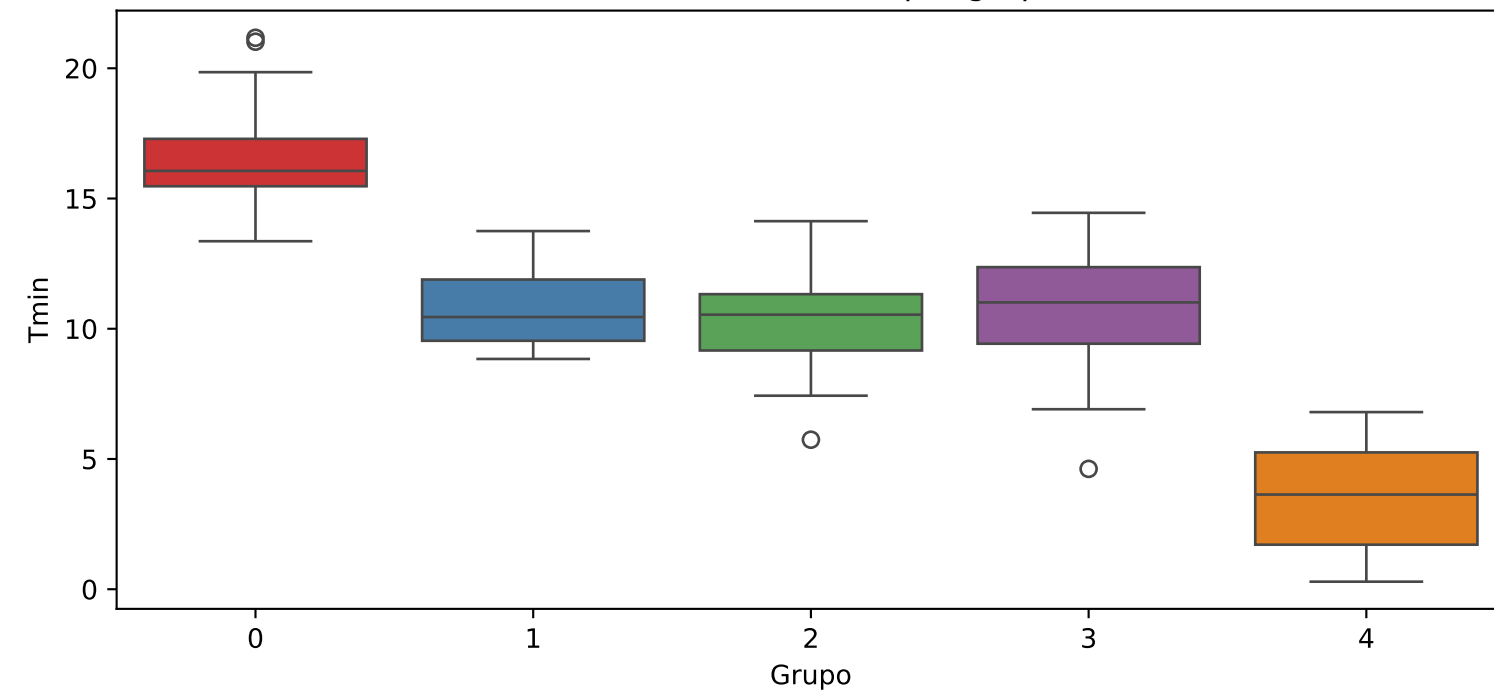


Boxplots por grupo — Ensenada (2014-2015)

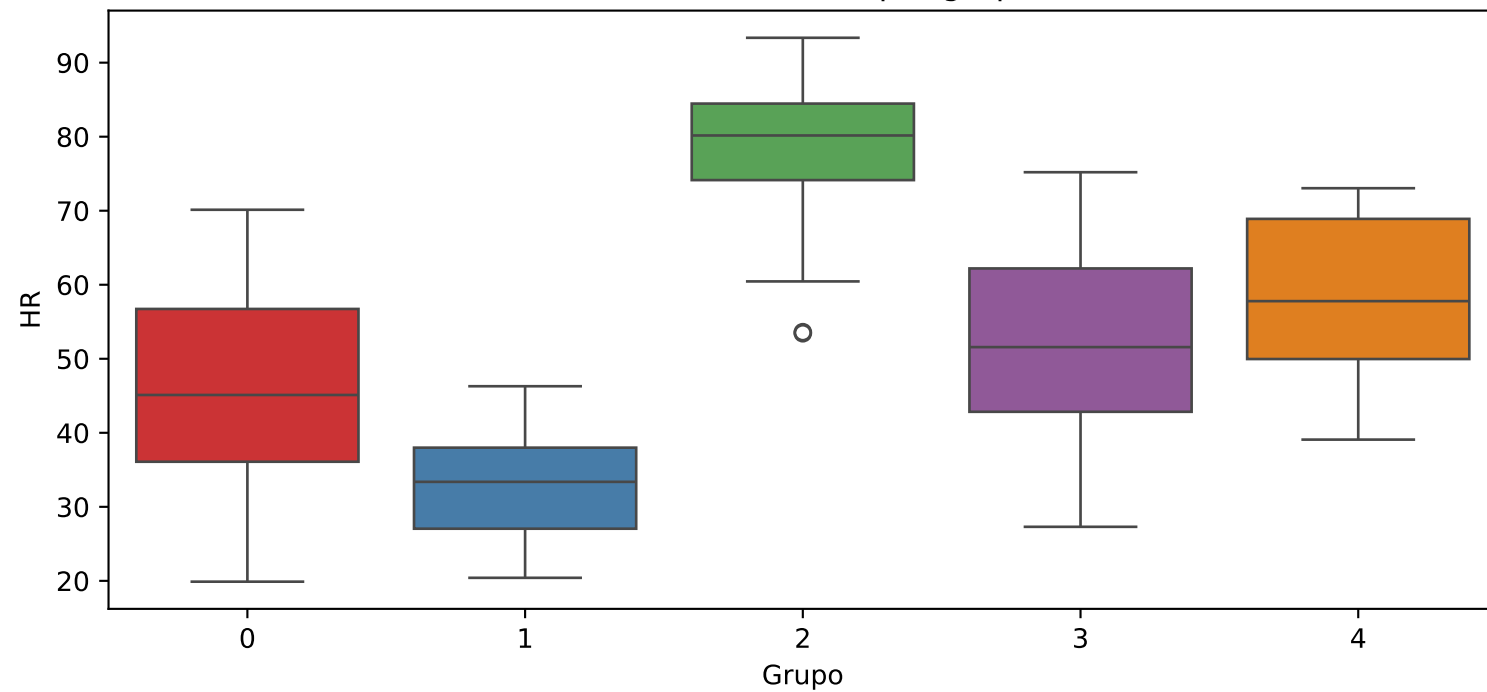
Distribución de Tmax por grupo



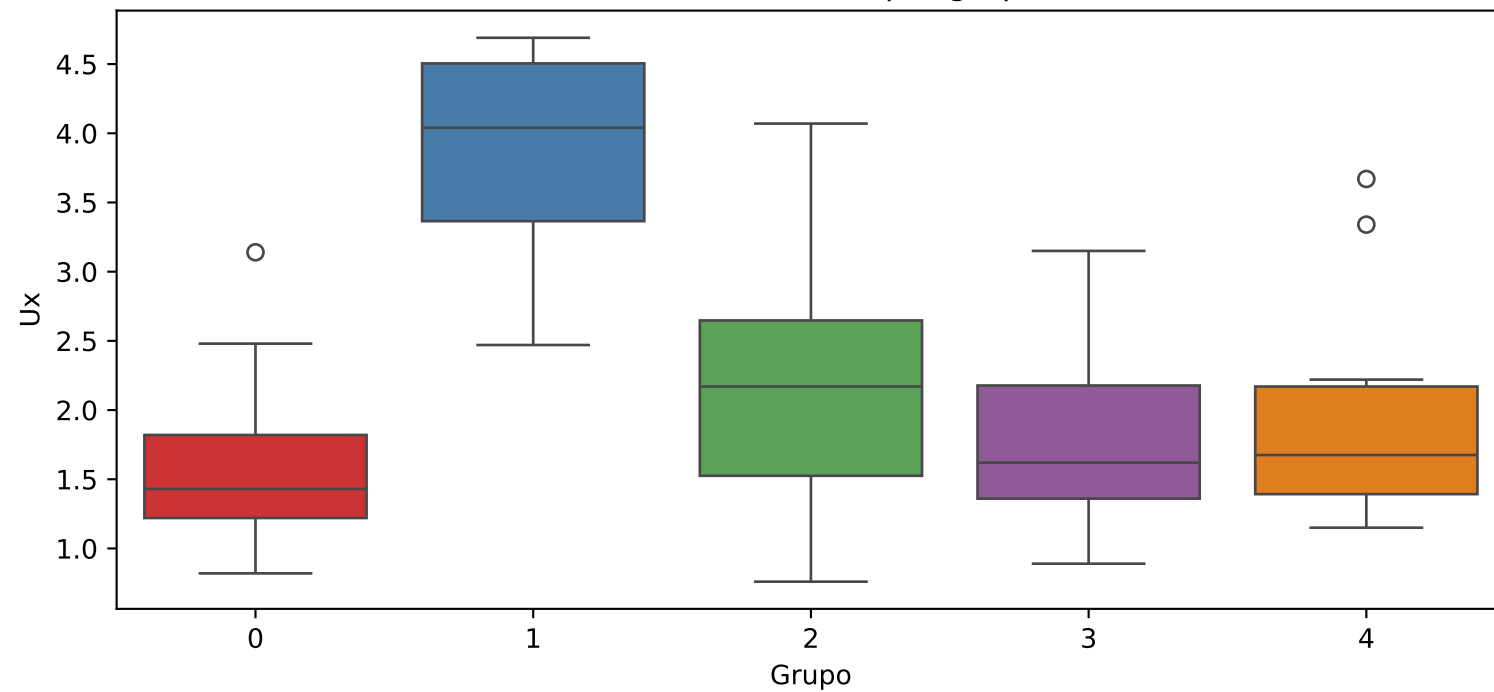
Distribución de Tmin por grupo



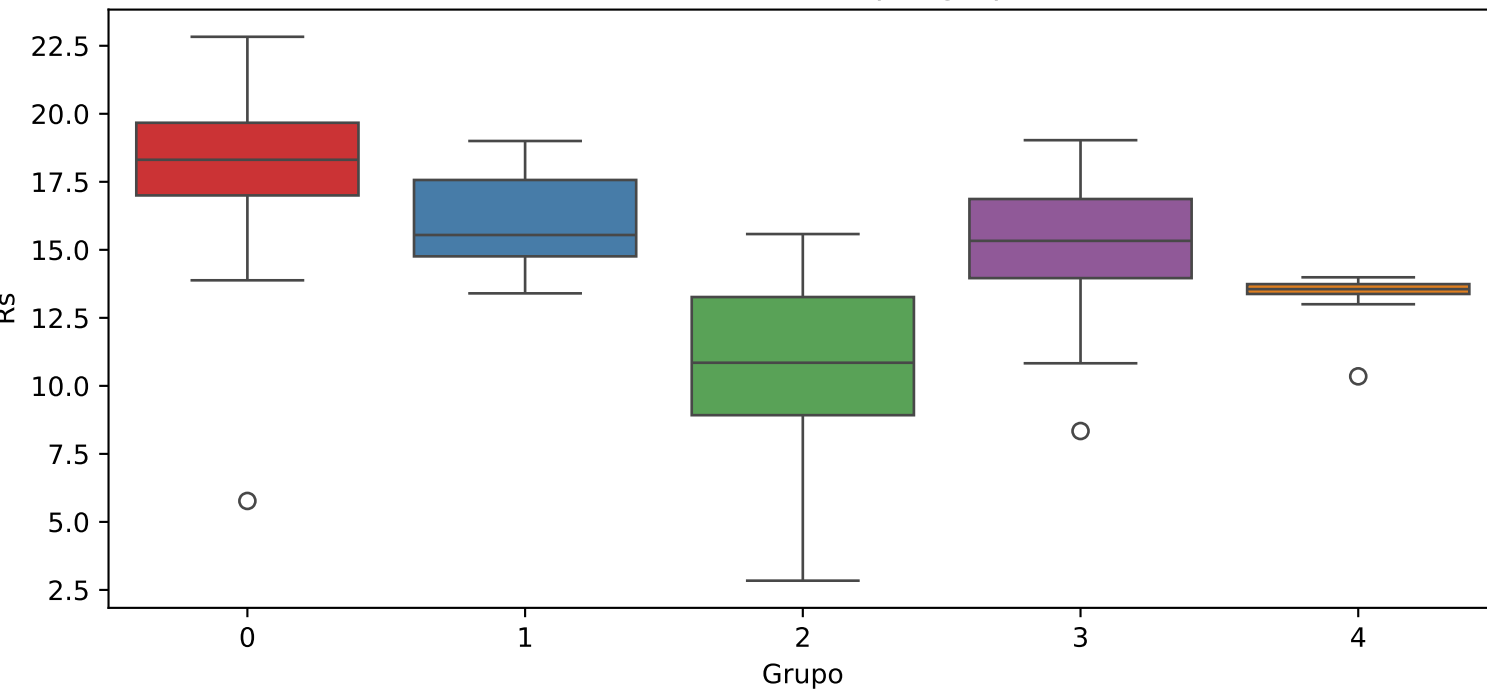
Distribución de HR por grupo



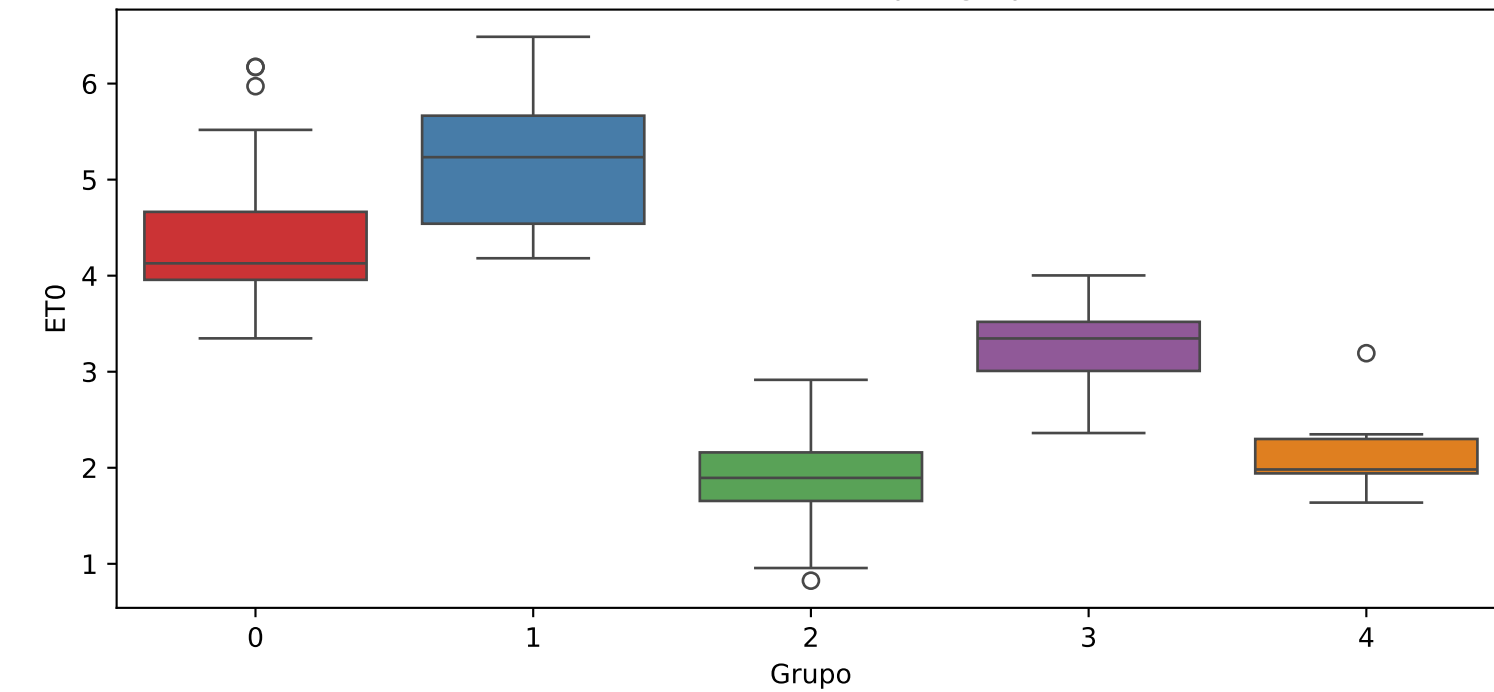
Distribución de Ux por grupo



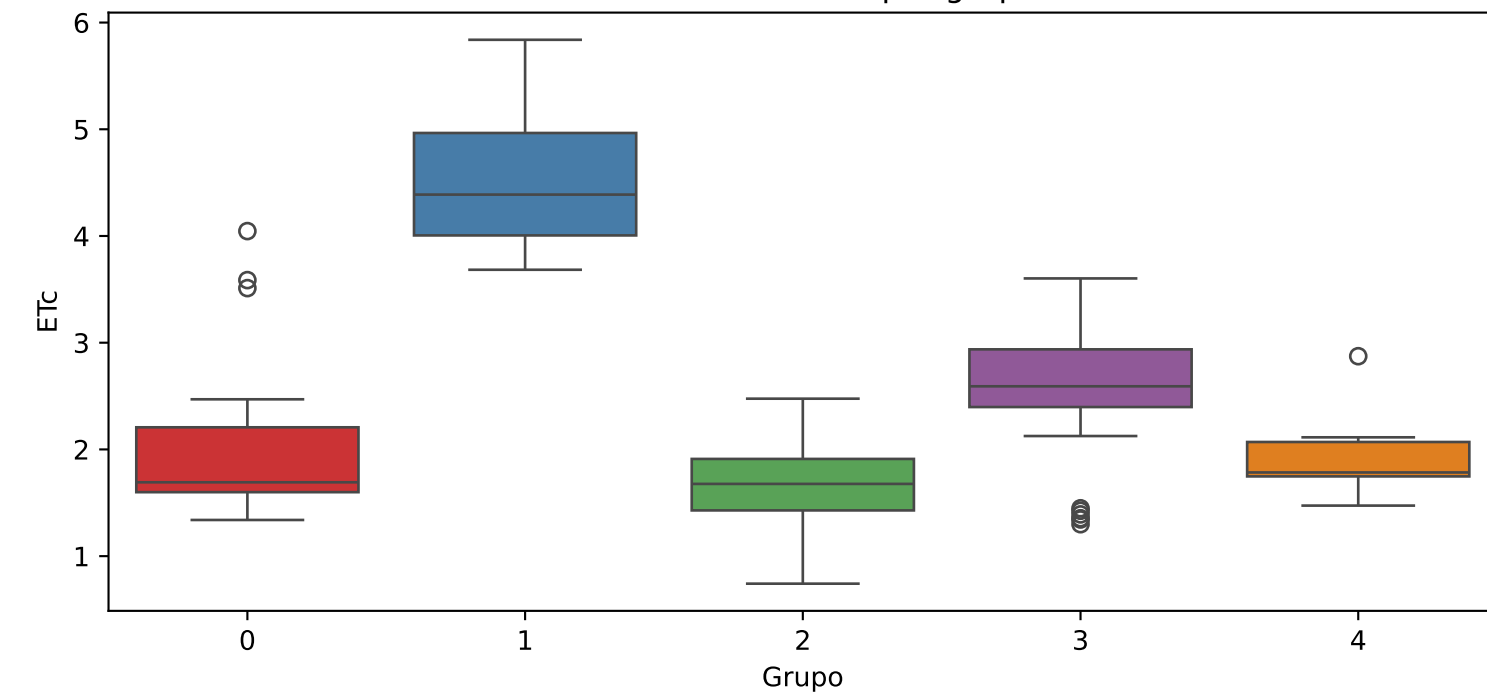
Distribución de Rs por grupo



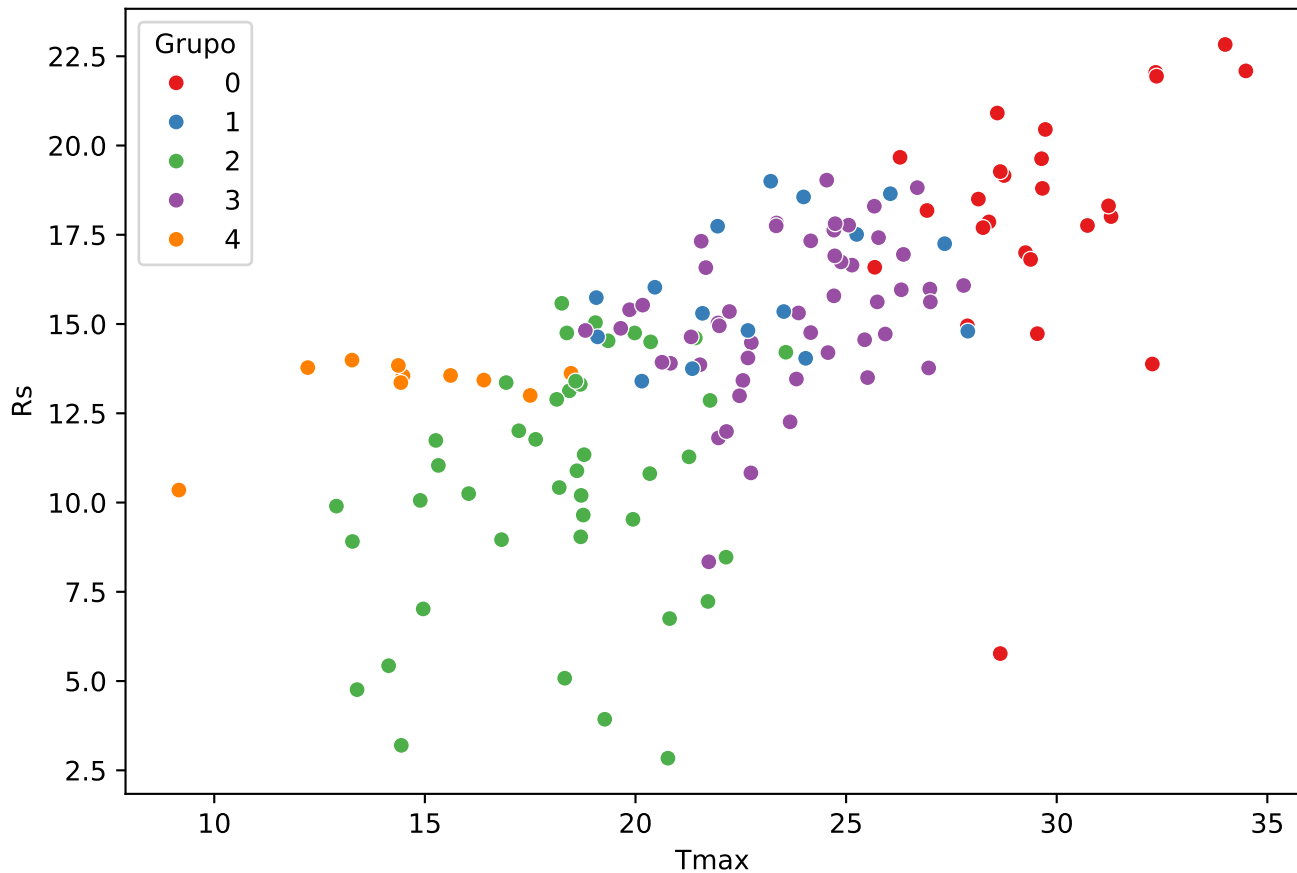
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2014-2015)



Ensenada — 2015-2016

Días del ciclo: 143

ETc total [mm]: 332.5

ETverde total [mm]: 29.6

ETazul total [mm]: 302.8

Tmax / Tmin [°C]: 33.4 / 1.3

Ensenada — 2015-2016 · Resultados y métricas

[Ensenada 2015-2016] Regresión Lineal ET0 — R^2 : 0.9635 MSE: 0.0474

[Ensenada 2015-2016] Random Forest ET0 — R^2 : 0.9449 MSE: 0.0716

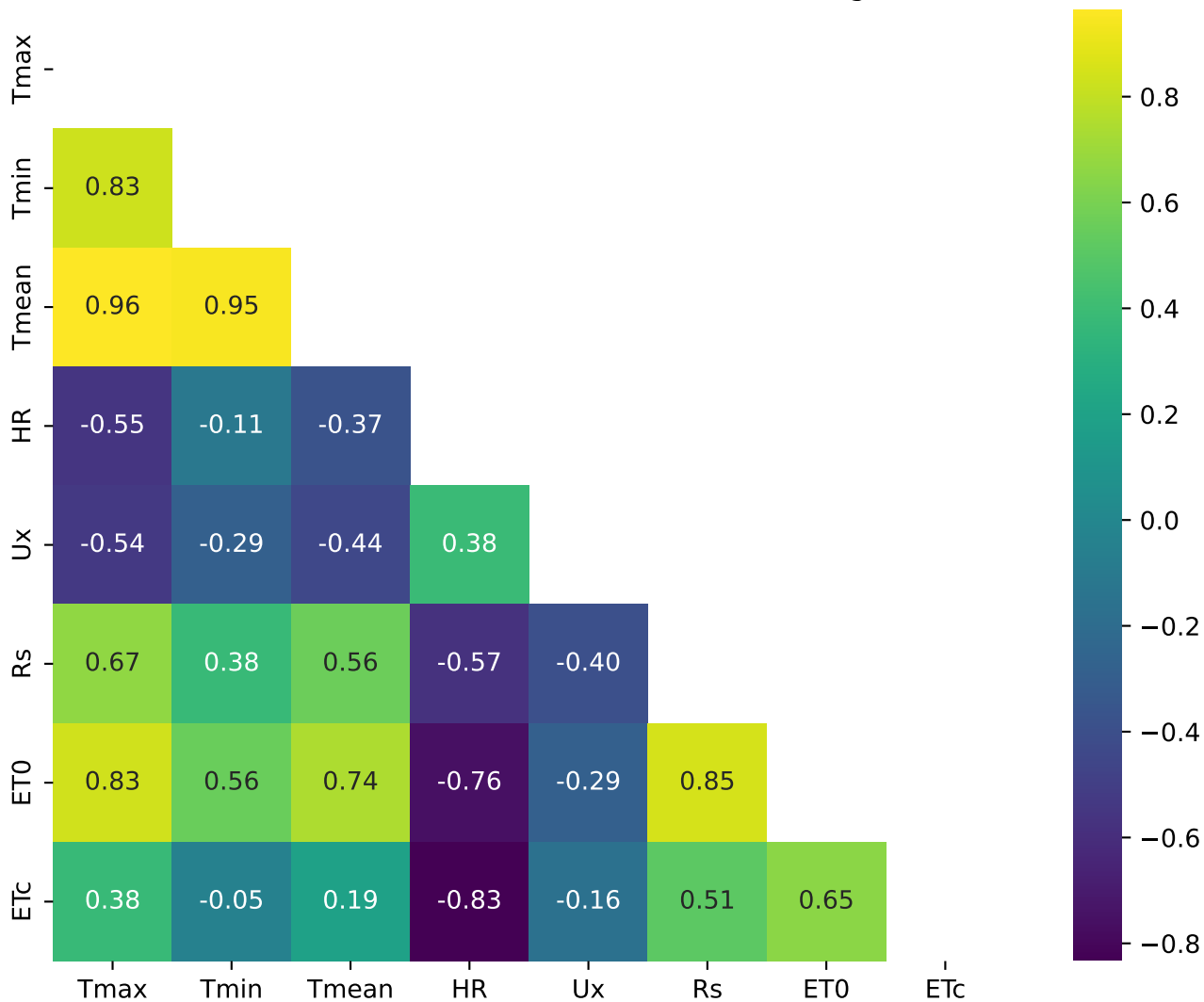
Importancias: {'Tmax': 0.4838397395454652, 'Tmin': 0.014736947103815649, 'HR': 0.11273471692387886, 'Ux': 0.034296678014251784, 'Rs': 0.35439191841258866}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 23.519000 | 15.551000 | 71.972000 | 2.518000 | 12.236000 | 2.866215 | 1.146486 |
| 1 | 17.310000 | 6.320638 | 63.152979 | 2.025319 | 13.476809 | 2.350022 | 2.080281 |
| 2 | 29.019474 | 17.630000 | 55.496842 | 1.860526 | 18.767895 | 4.489155 | 1.795662 |
| 3 | 24.589778 | 10.596222 | 37.425333 | 2.157333 | 16.424000 | 4.057692 | 3.433308 |
| 4 | 13.779545 | 7.359545 | 79.684545 | 4.366364 | 10.316364 | 1.772459 | 1.573377 |

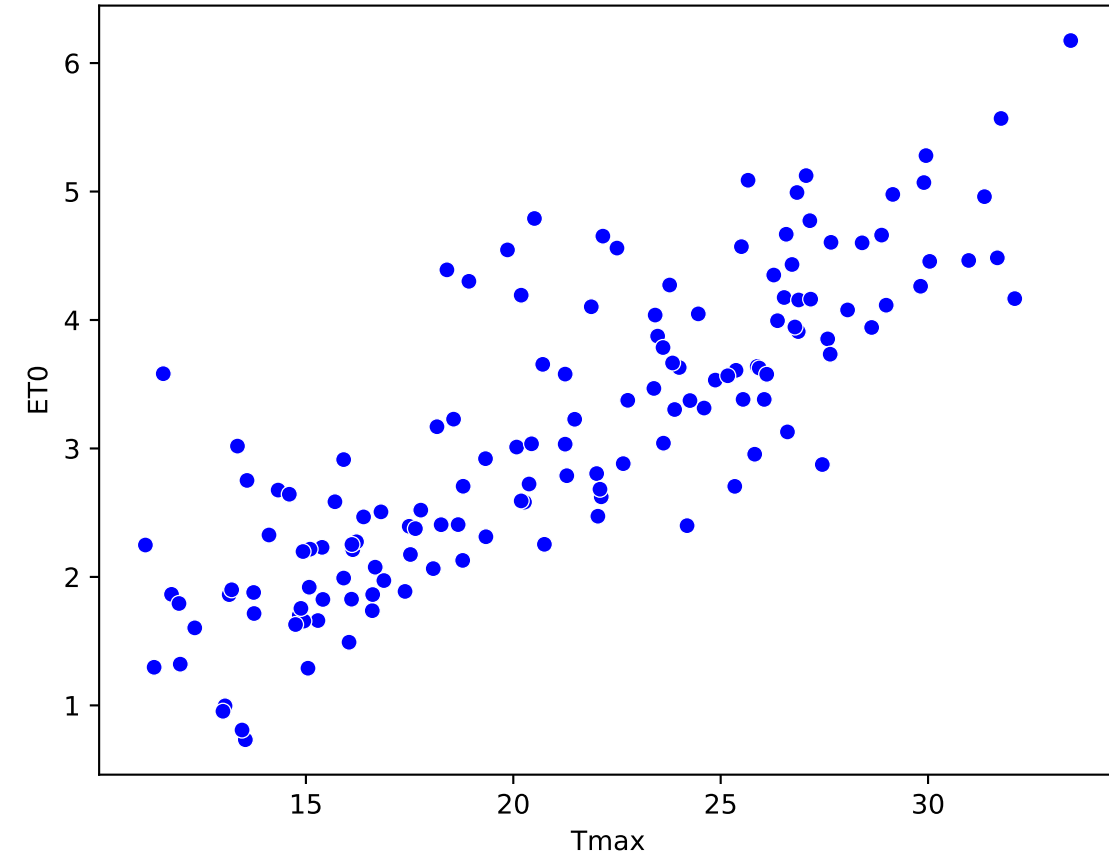
Ensenada — 2015-2016

Matriz de Correlación entre Variables Meteorológicas

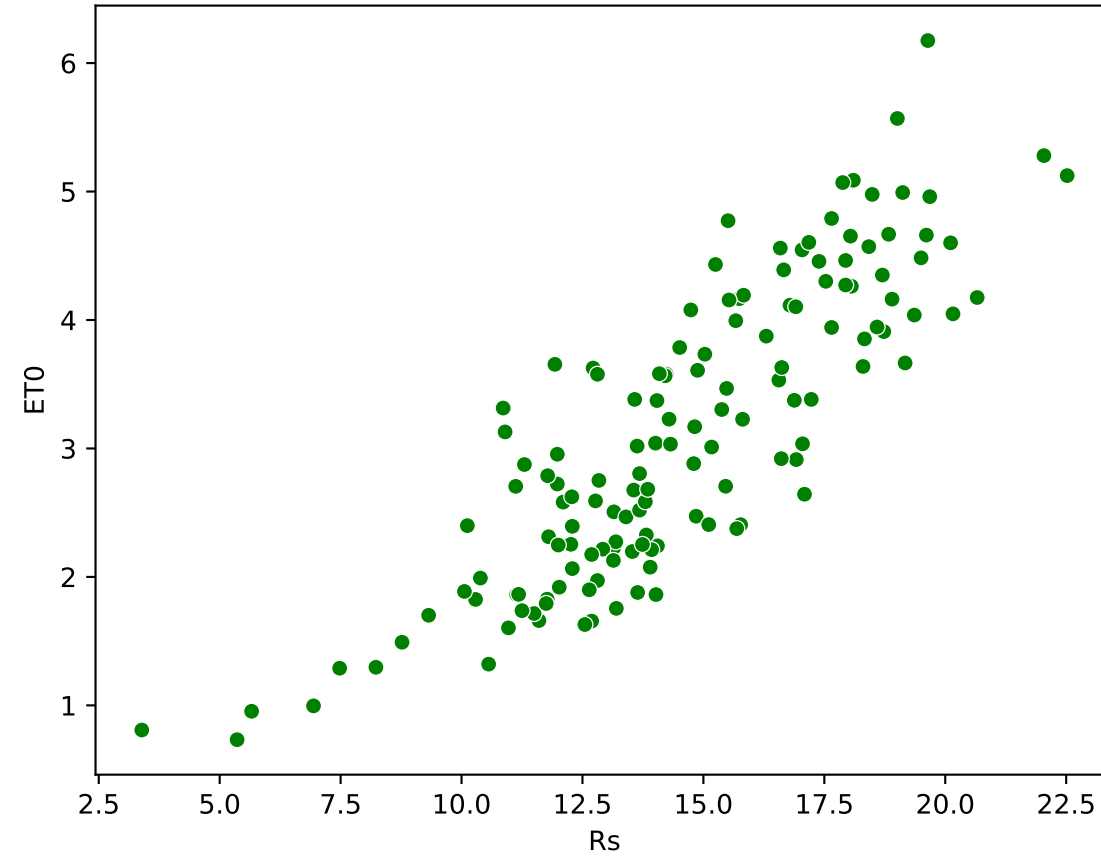


Dispersión — Ensenada (2015-2016)

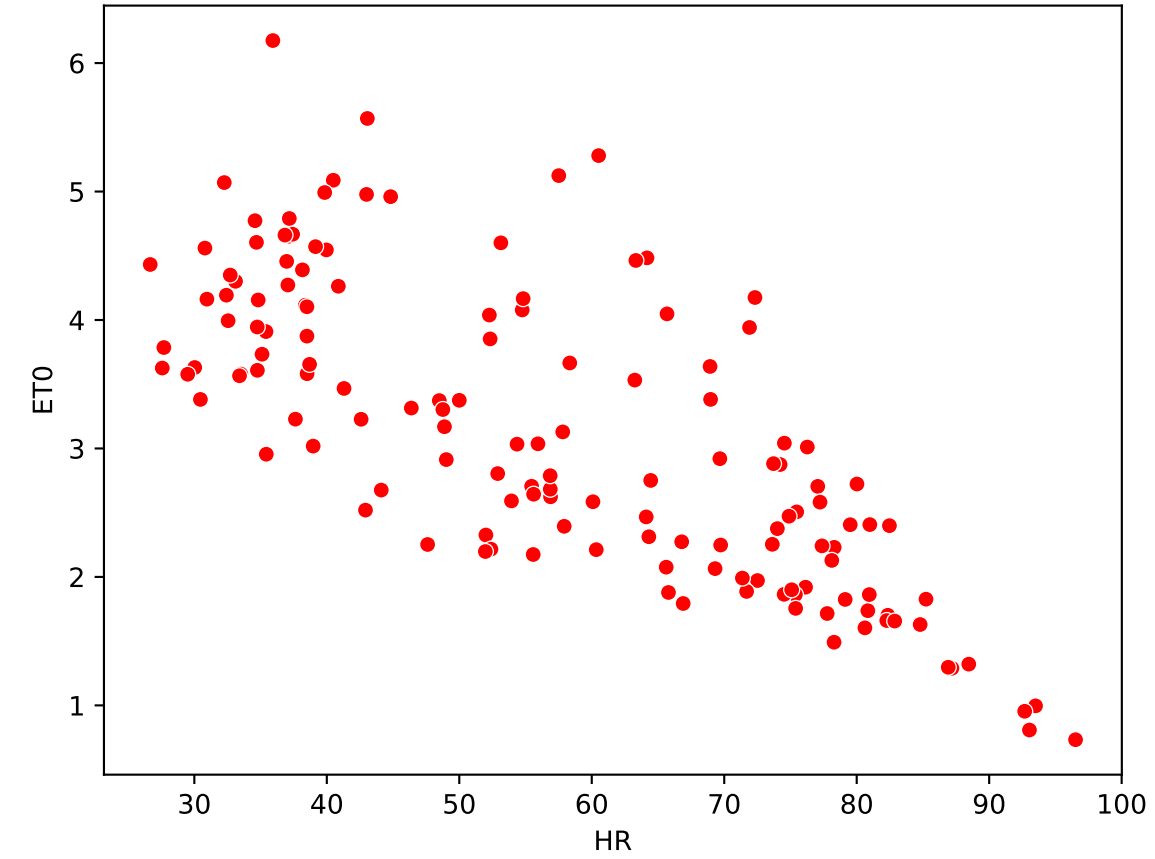
Tmax vs ET0



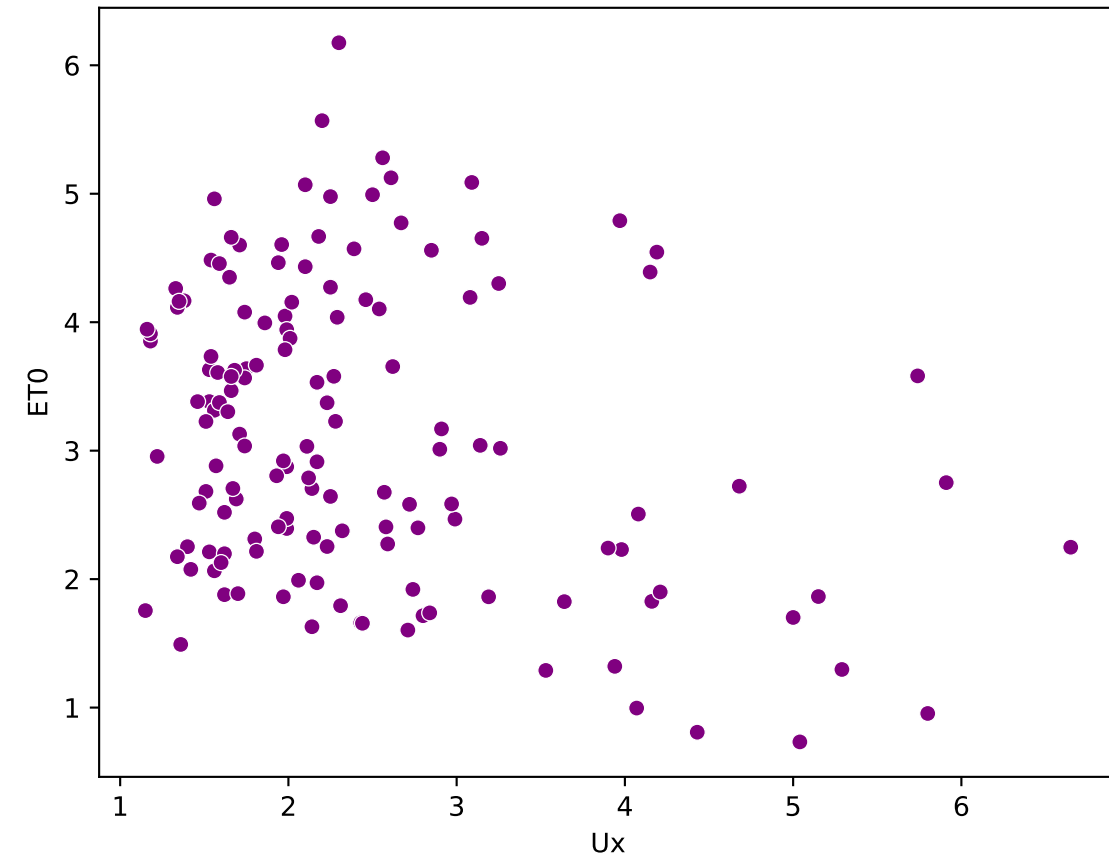
Rs vs ET0



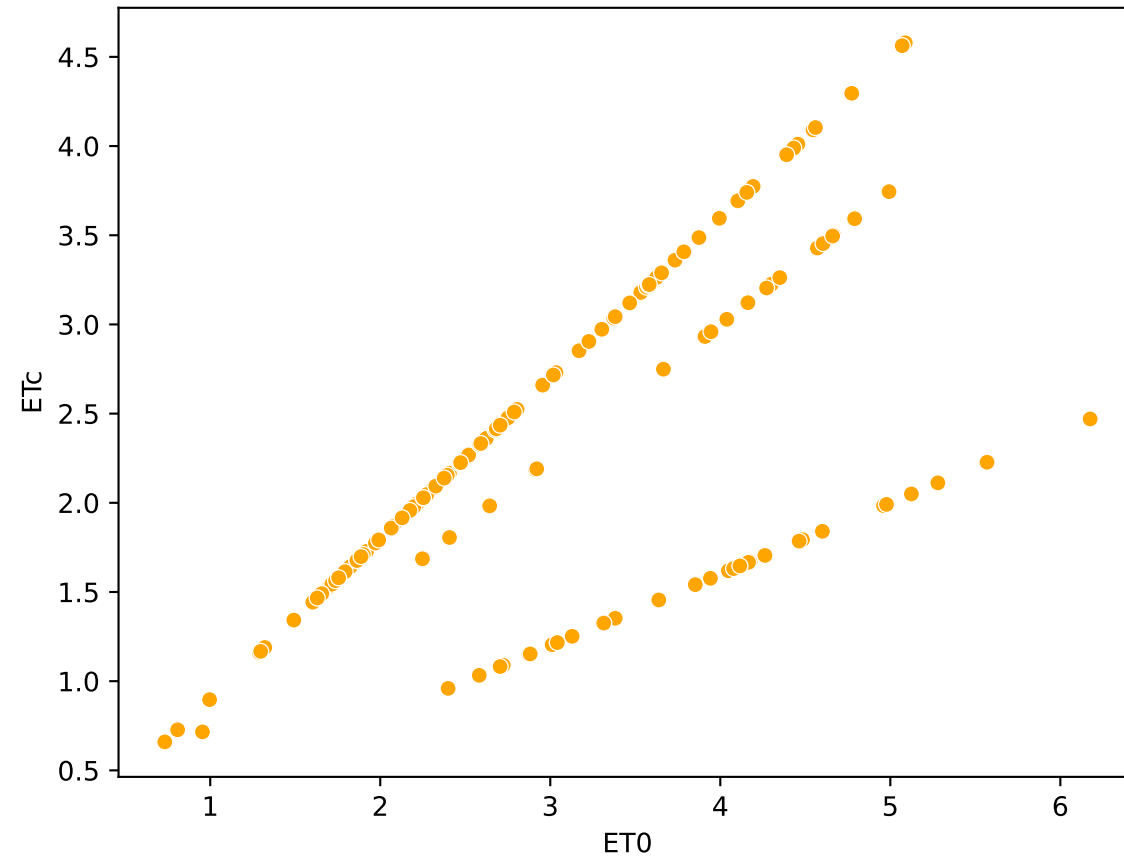
HR vs ET0



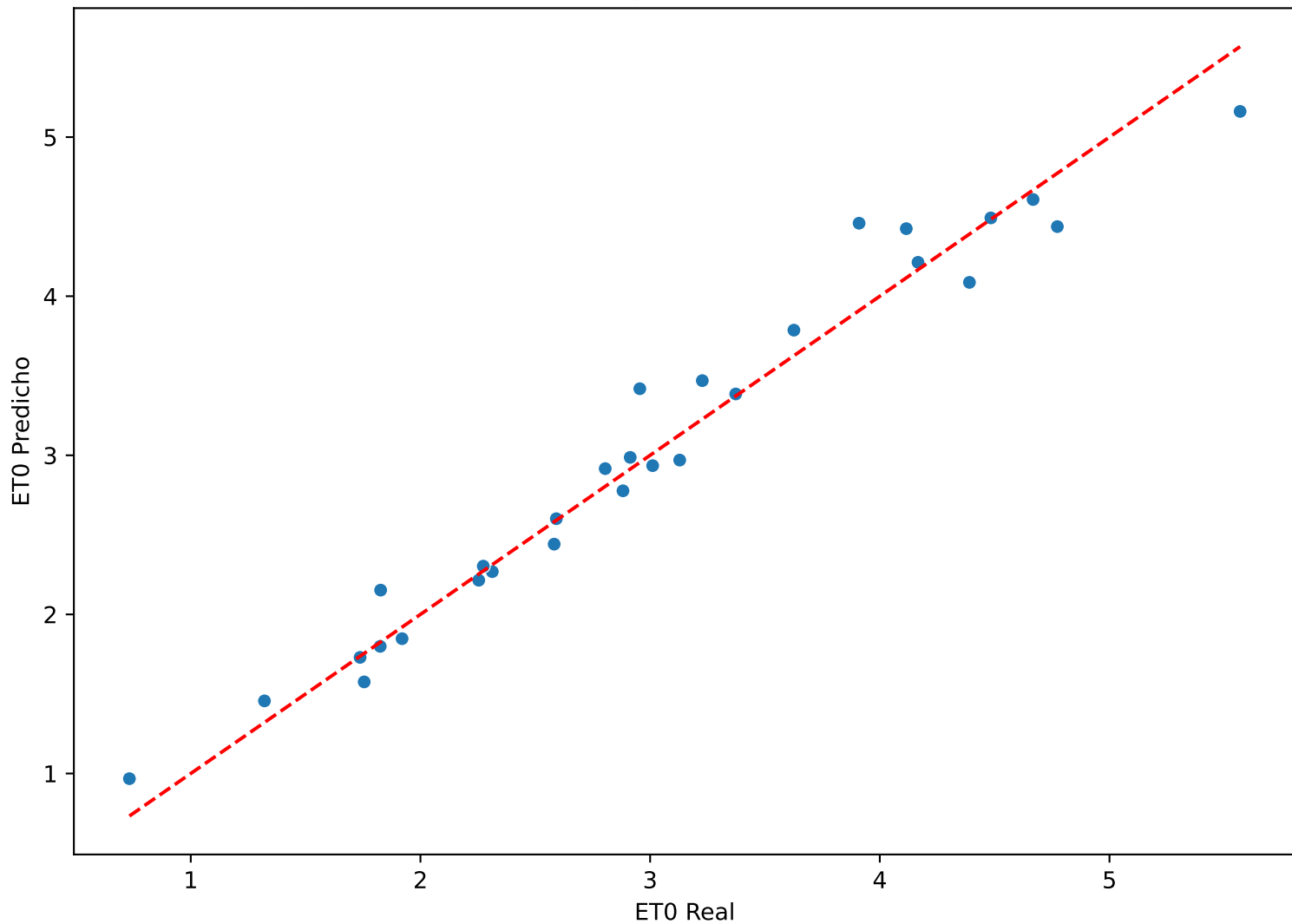
Ux vs ET0



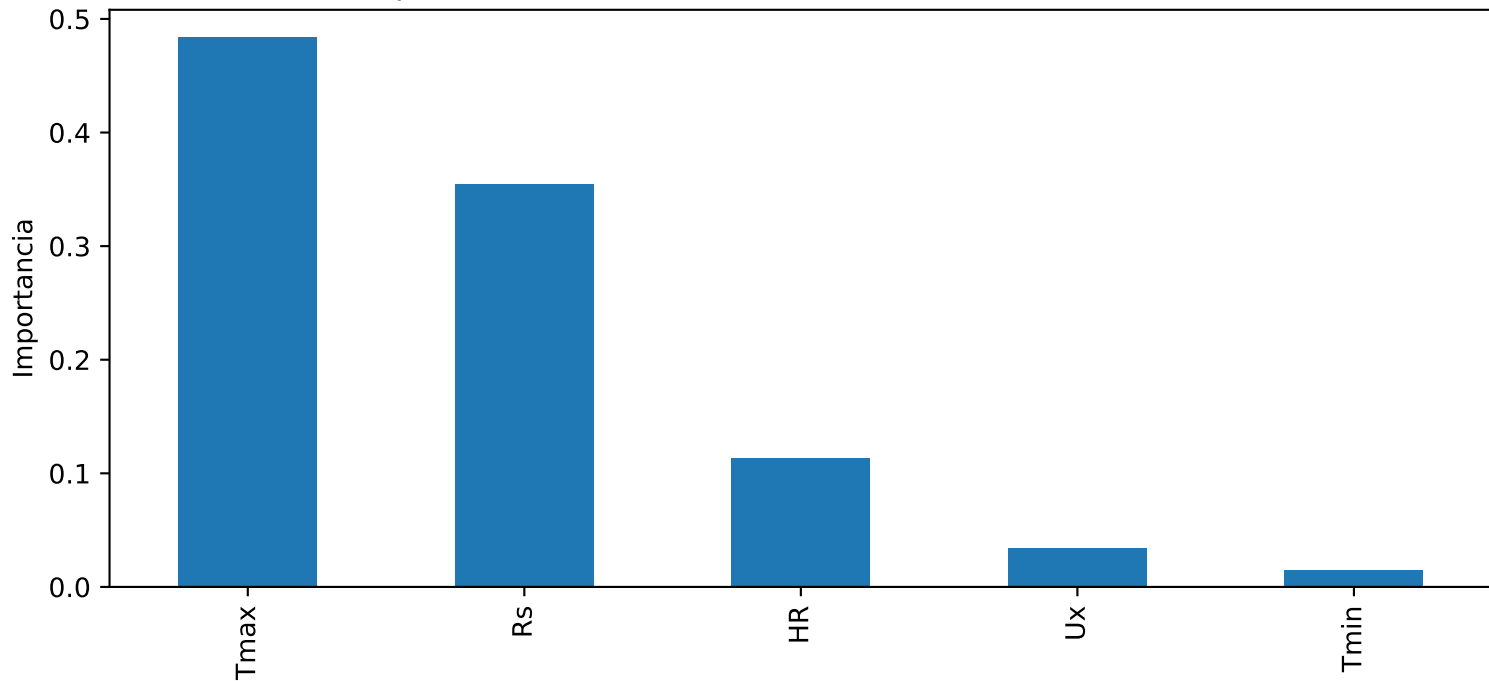
ET0 vs ETc



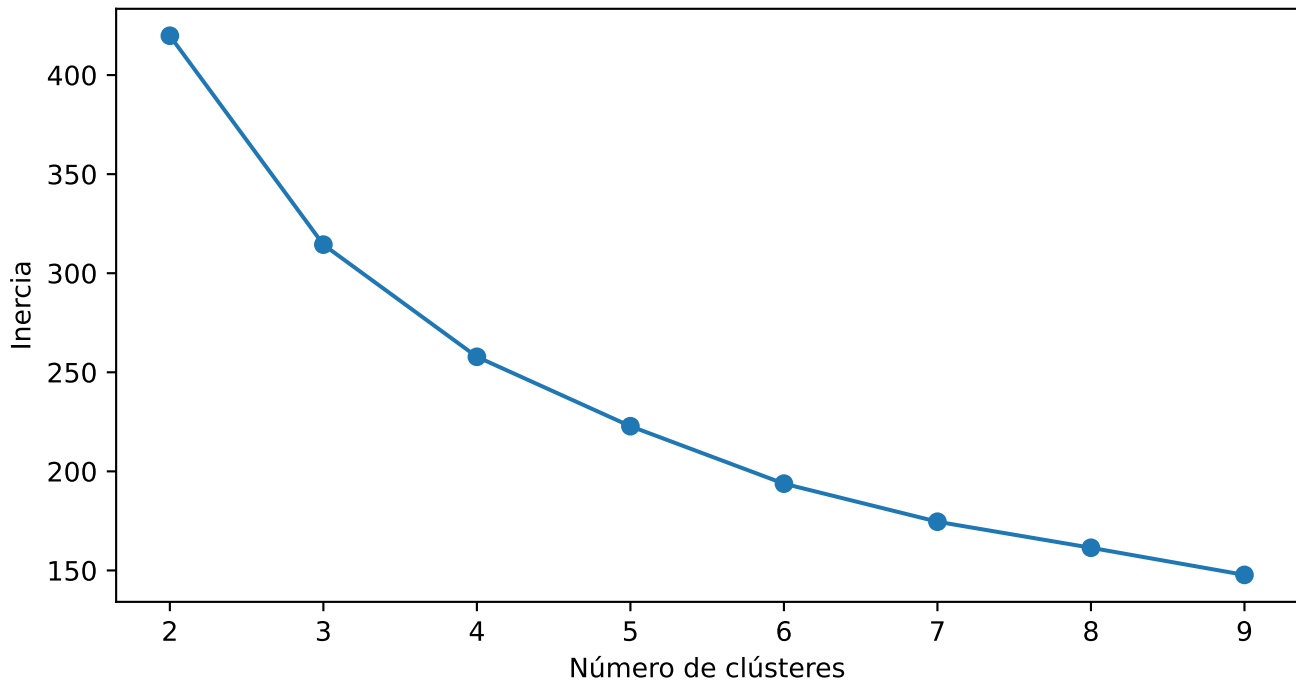
Comparación entre ET0 Real y Predicho — Ensenada (2015-2016)



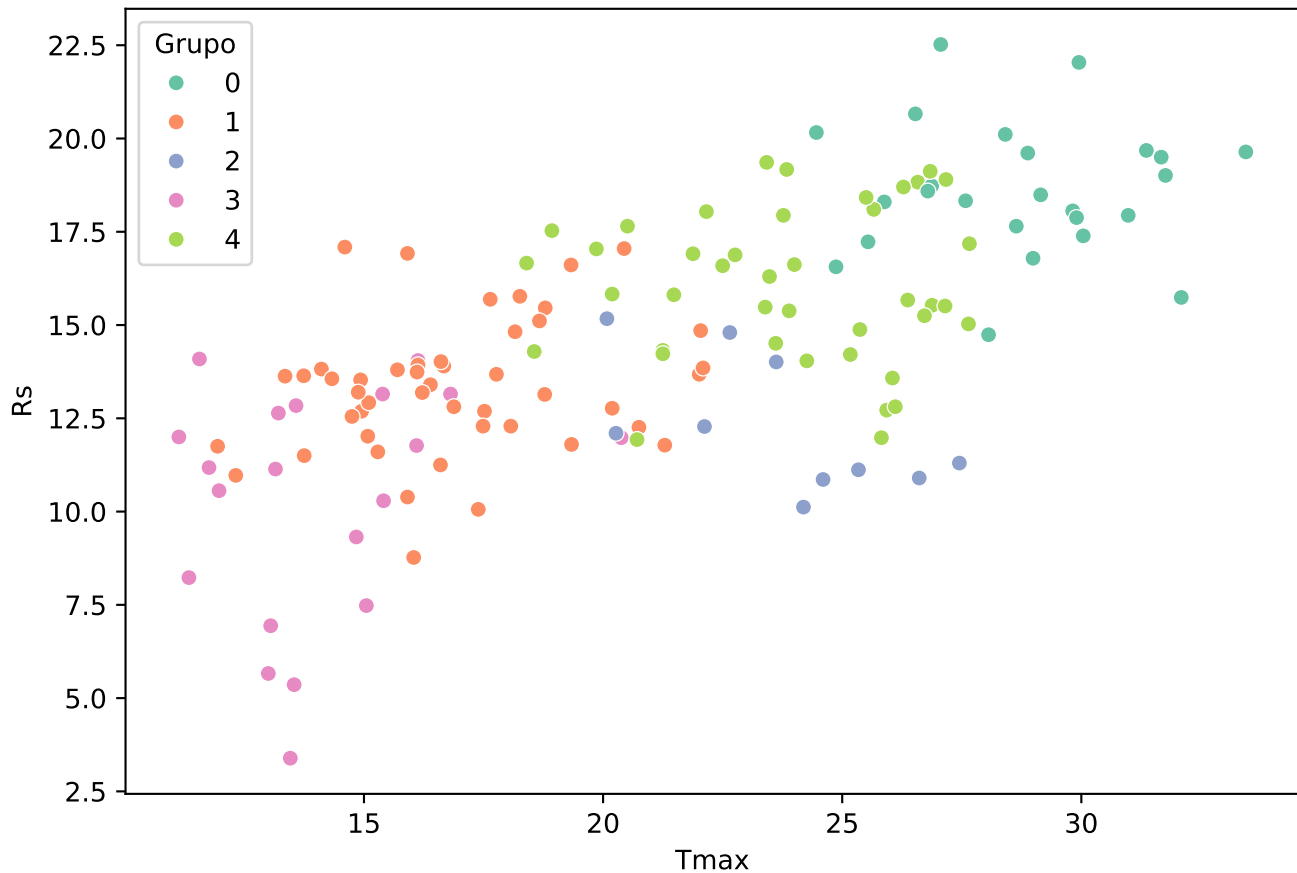
Importancia de variables (RF) — Ensenada (2015-2016)



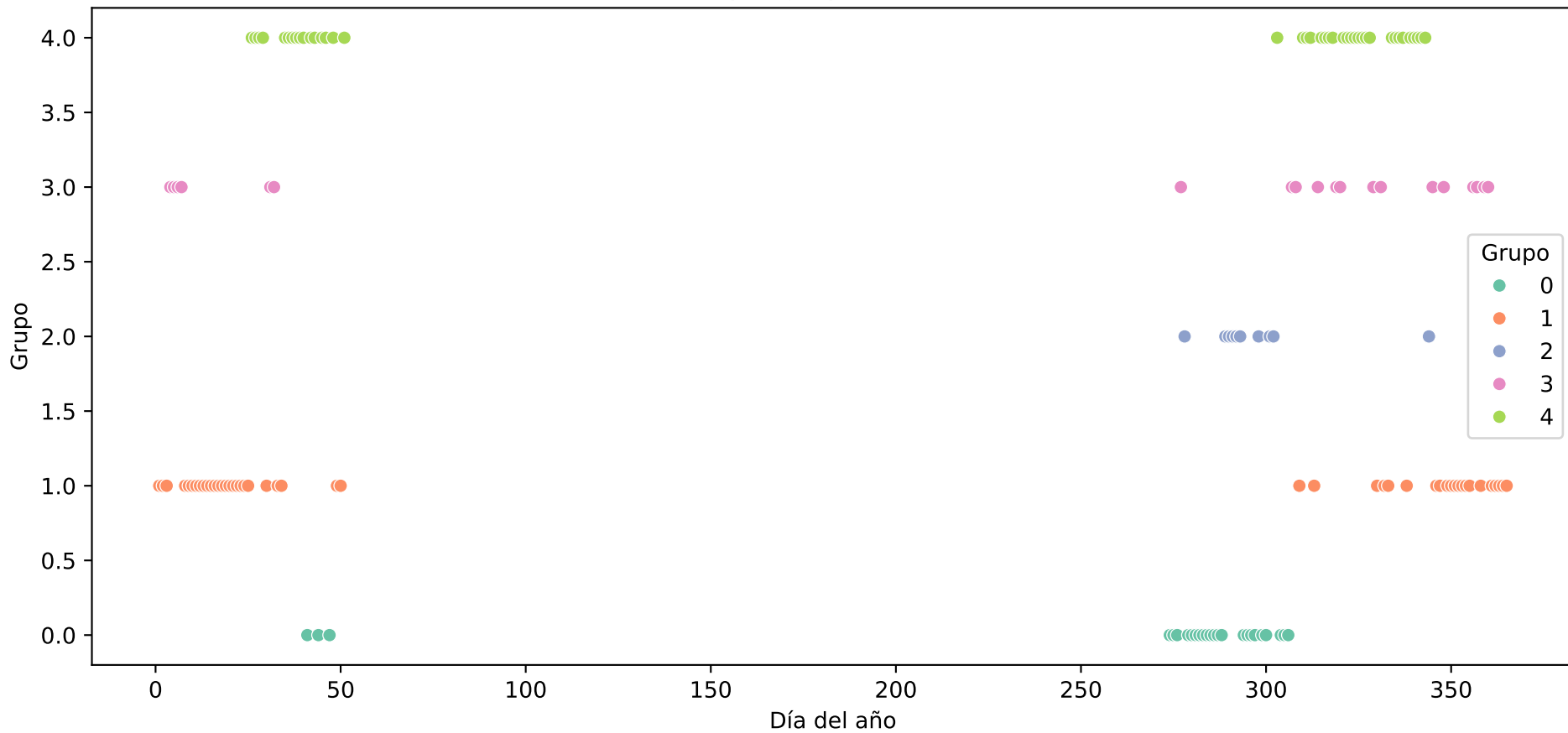
Método del codo



Clasificación de días climáticos — Ensenada (2015-2016)

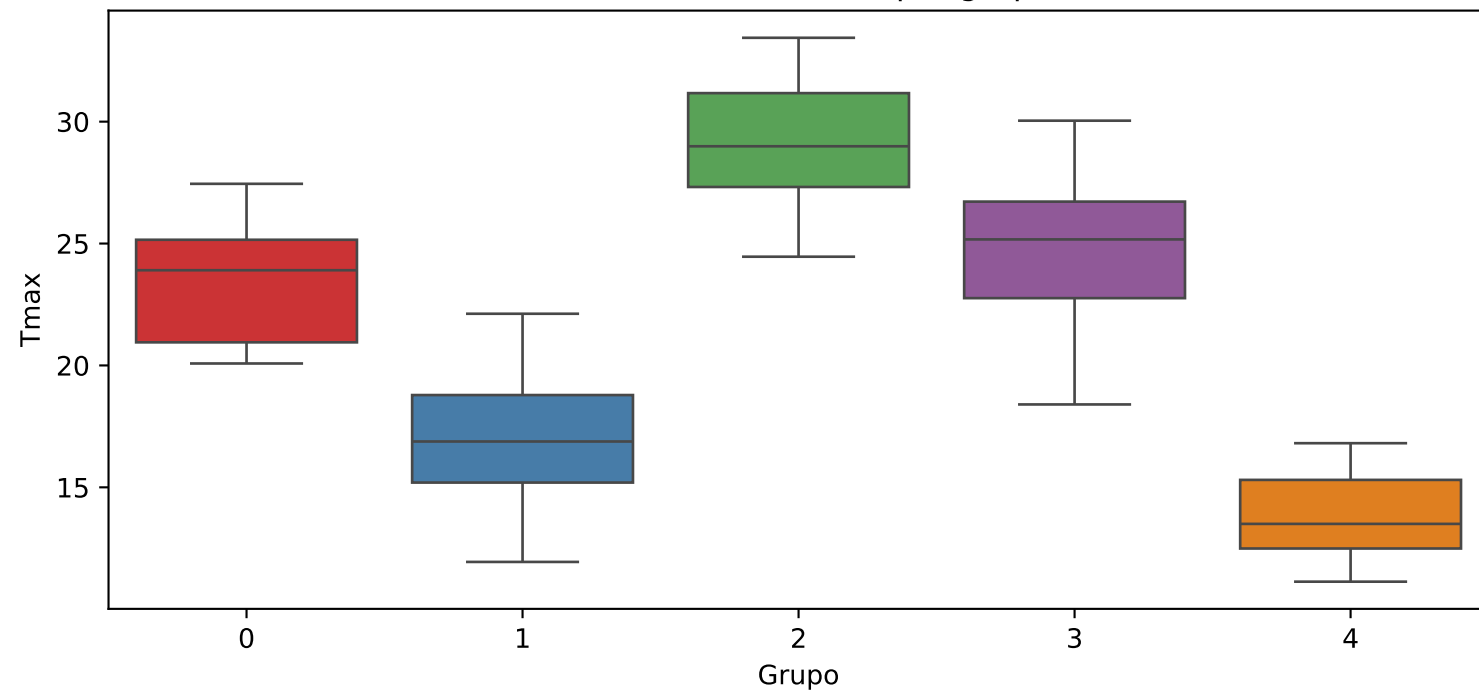


Distribución de días por grupo — Ensenada (2015-2016)

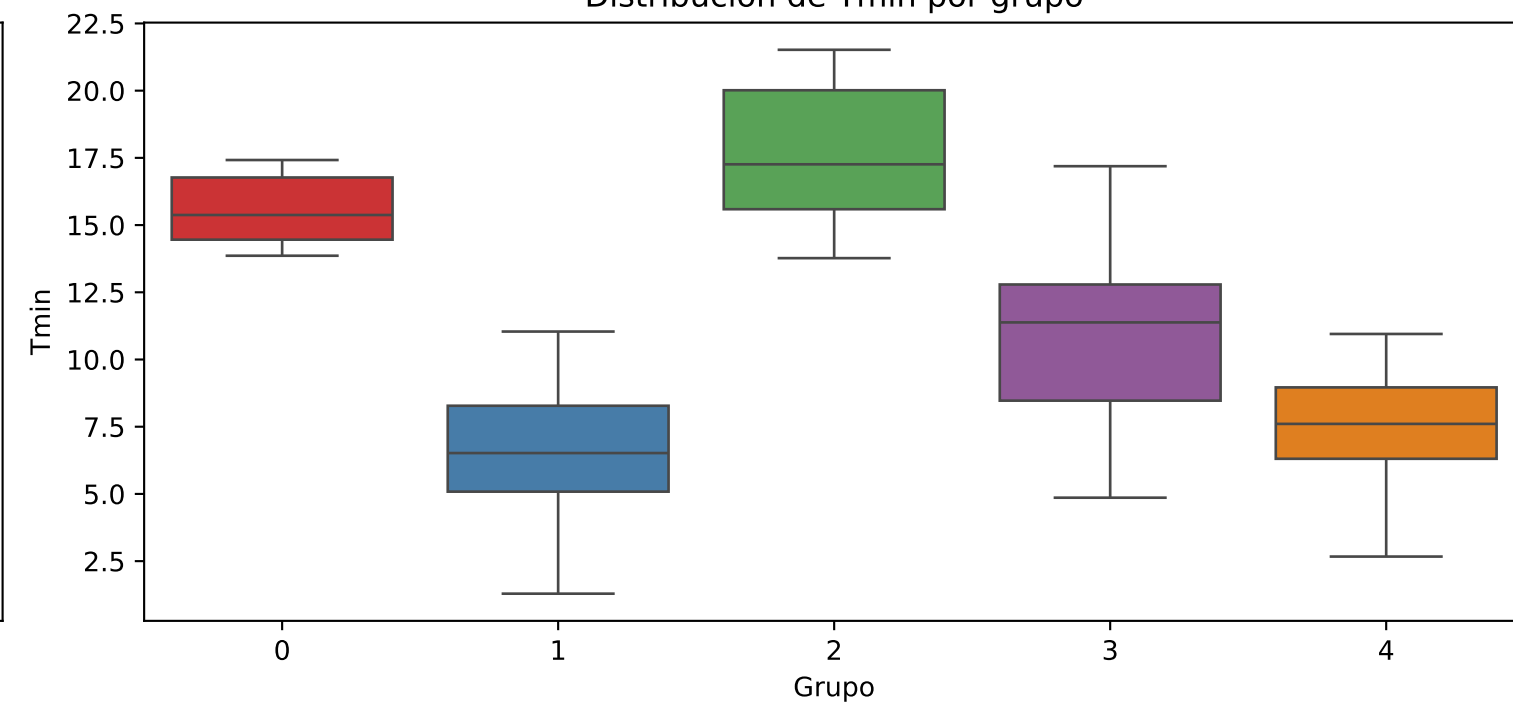


Boxplots por grupo — Ensenada (2015-2016)

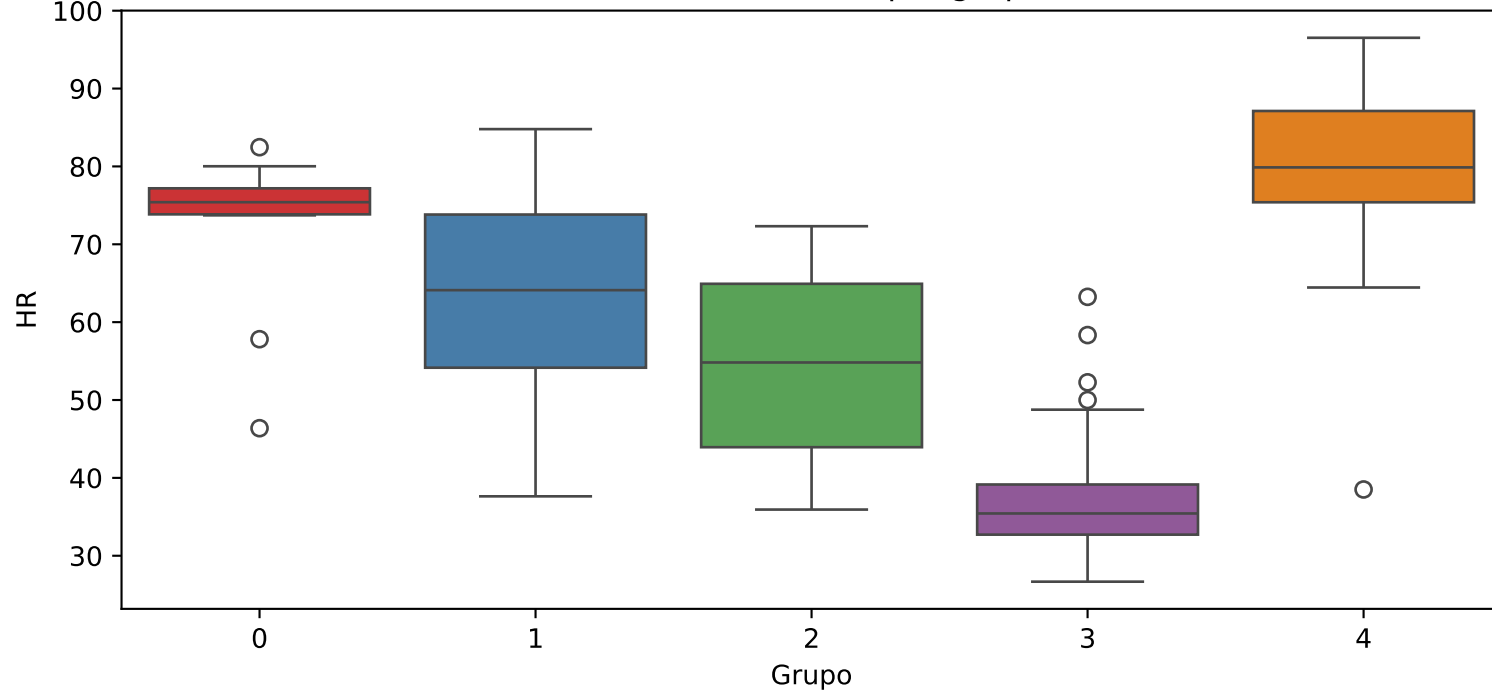
Distribución de Tmax por grupo



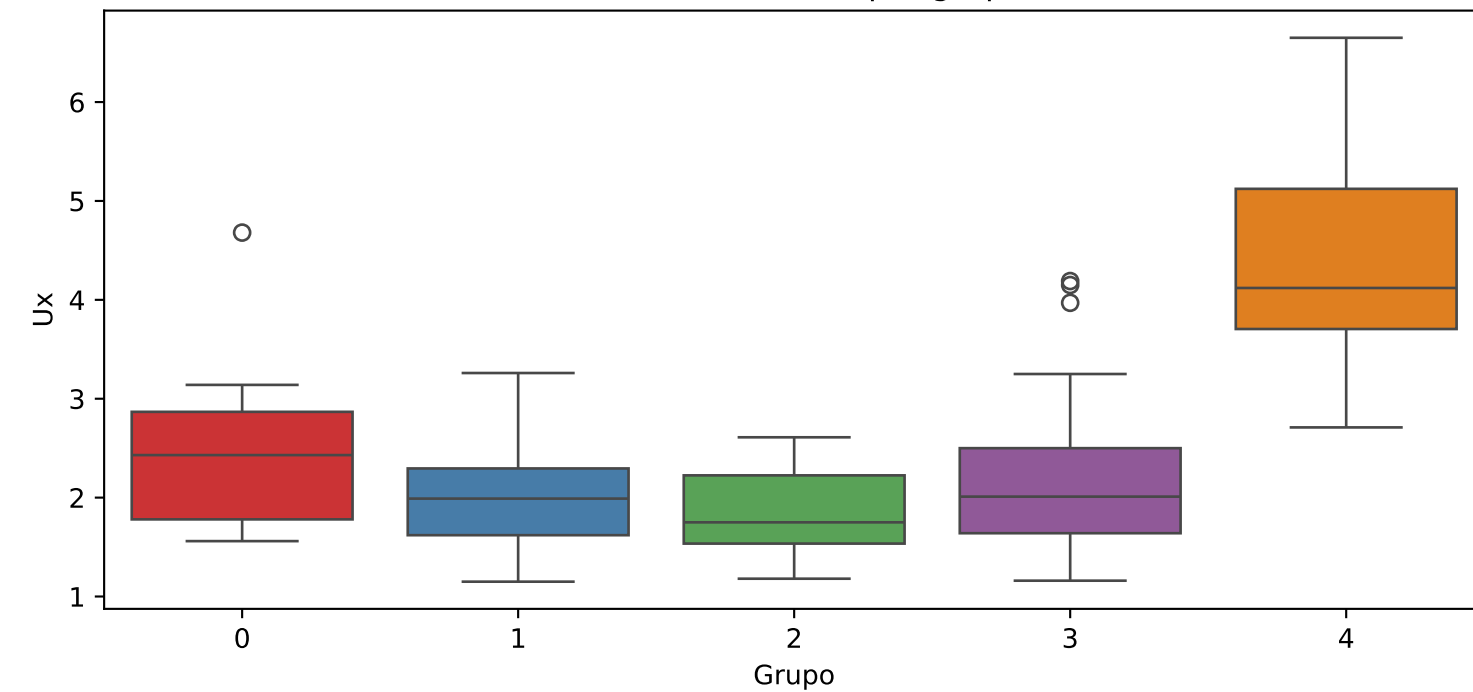
Distribución de Tmin por grupo



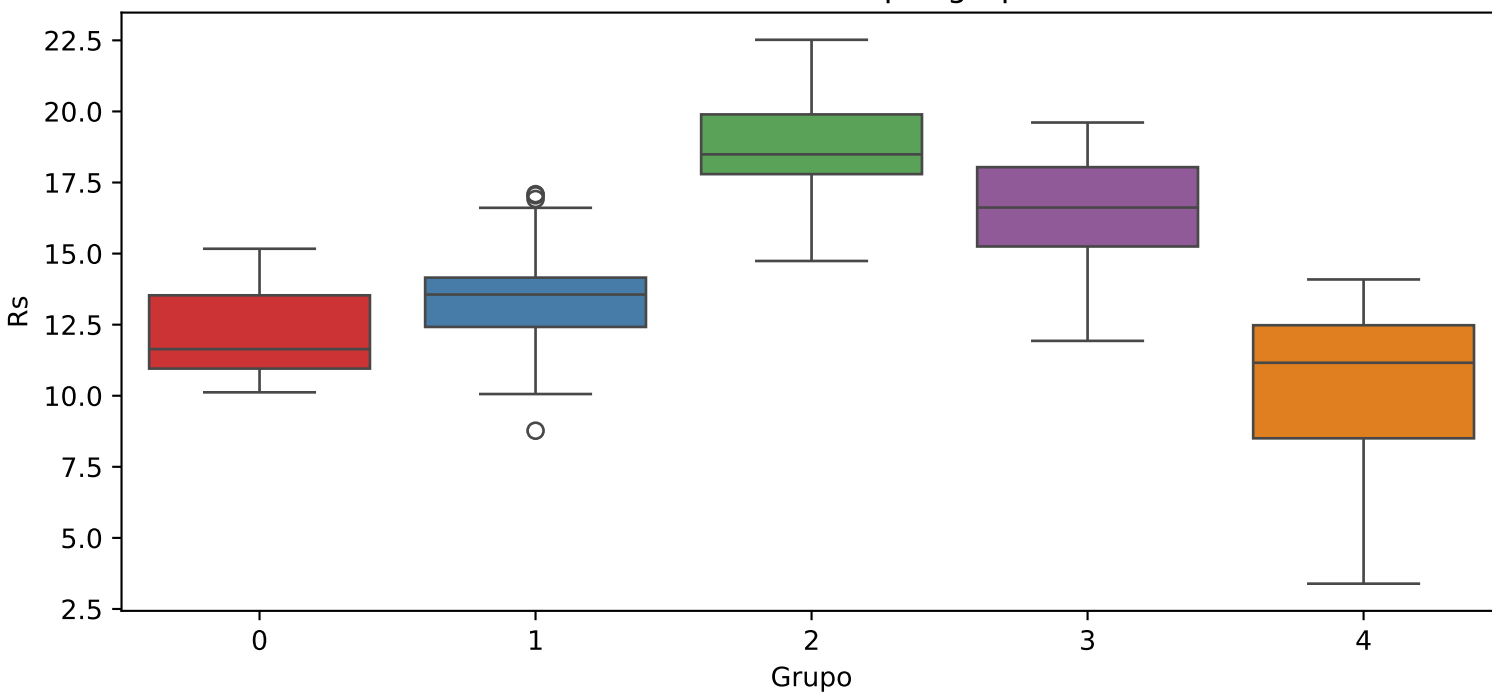
Distribución de HR por grupo



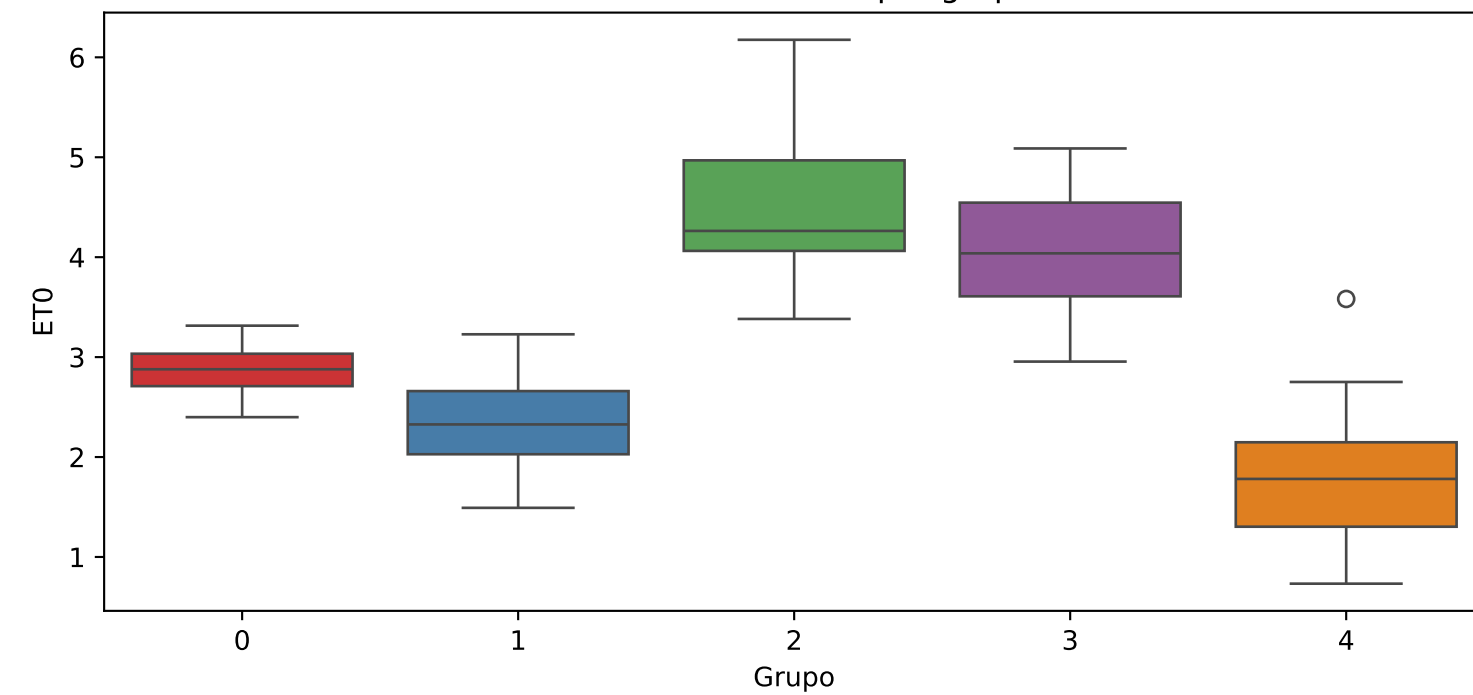
Distribución de Ux por grupo



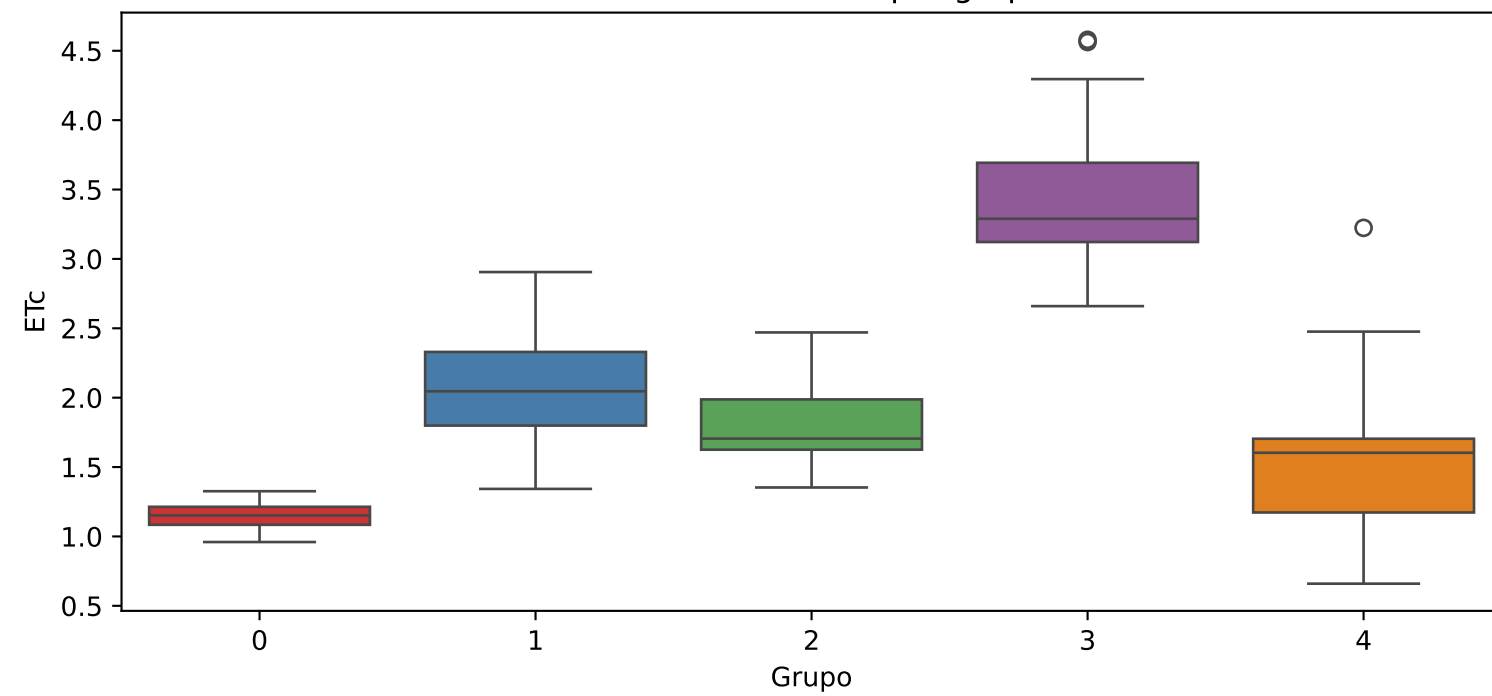
Distribución de Rs por grupo



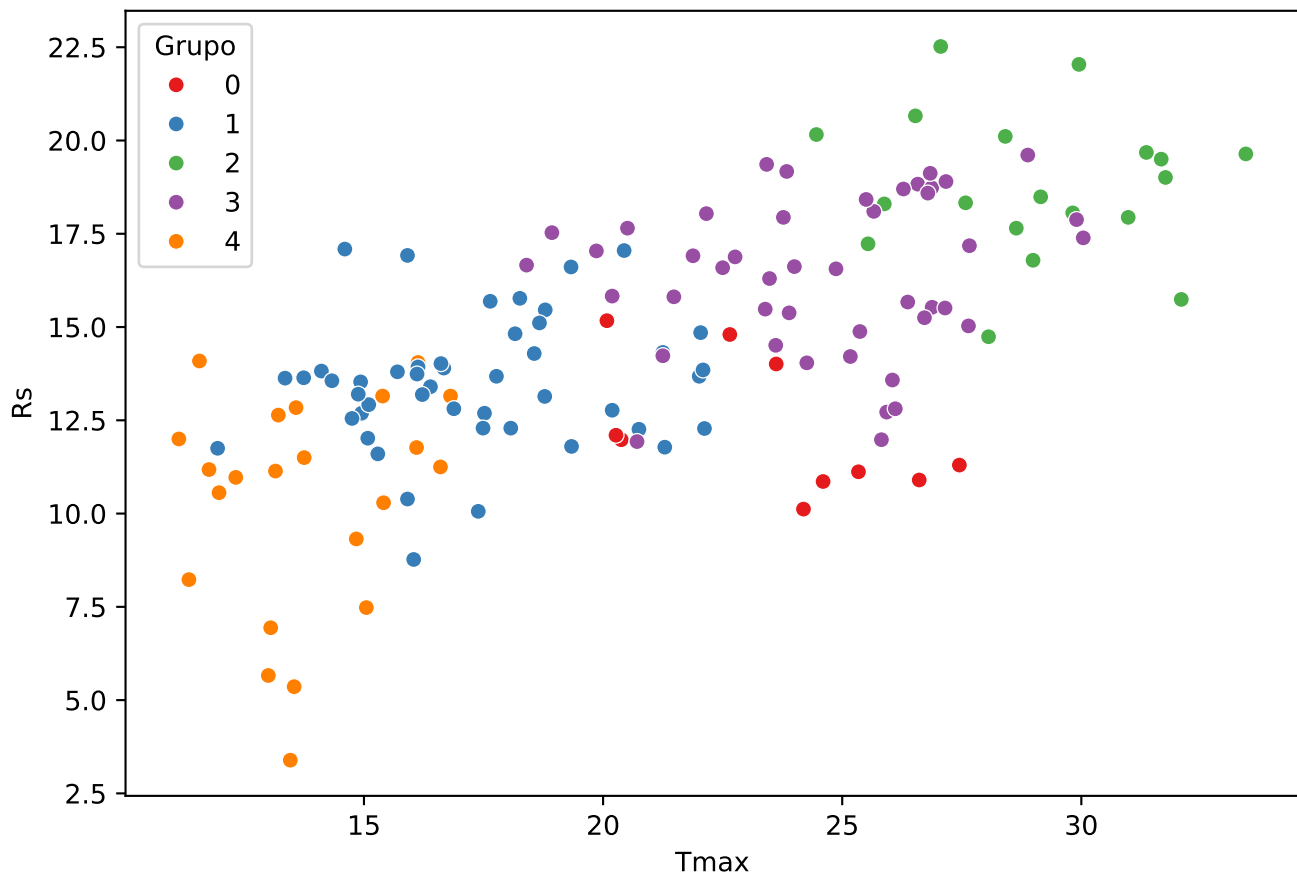
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2015-2016)



Ensenada — 2016-2017

Días del ciclo: 143

ETc total [mm]: 311.5

ETverde total [mm]: 34.5

ETazul total [mm]: 277.0

Tmax / Tmin [°C]: 31.9 / 1.8

Ensenada — 2016-2017 · Resultados y métricas

[Ensenada 2016-2017] Regresión Lineal ET0 — R^2 : 0.9646 MSE: 0.0515

[Ensenada 2016-2017] Random Forest ET0 — R^2 : 0.9282 MSE: 0.1045

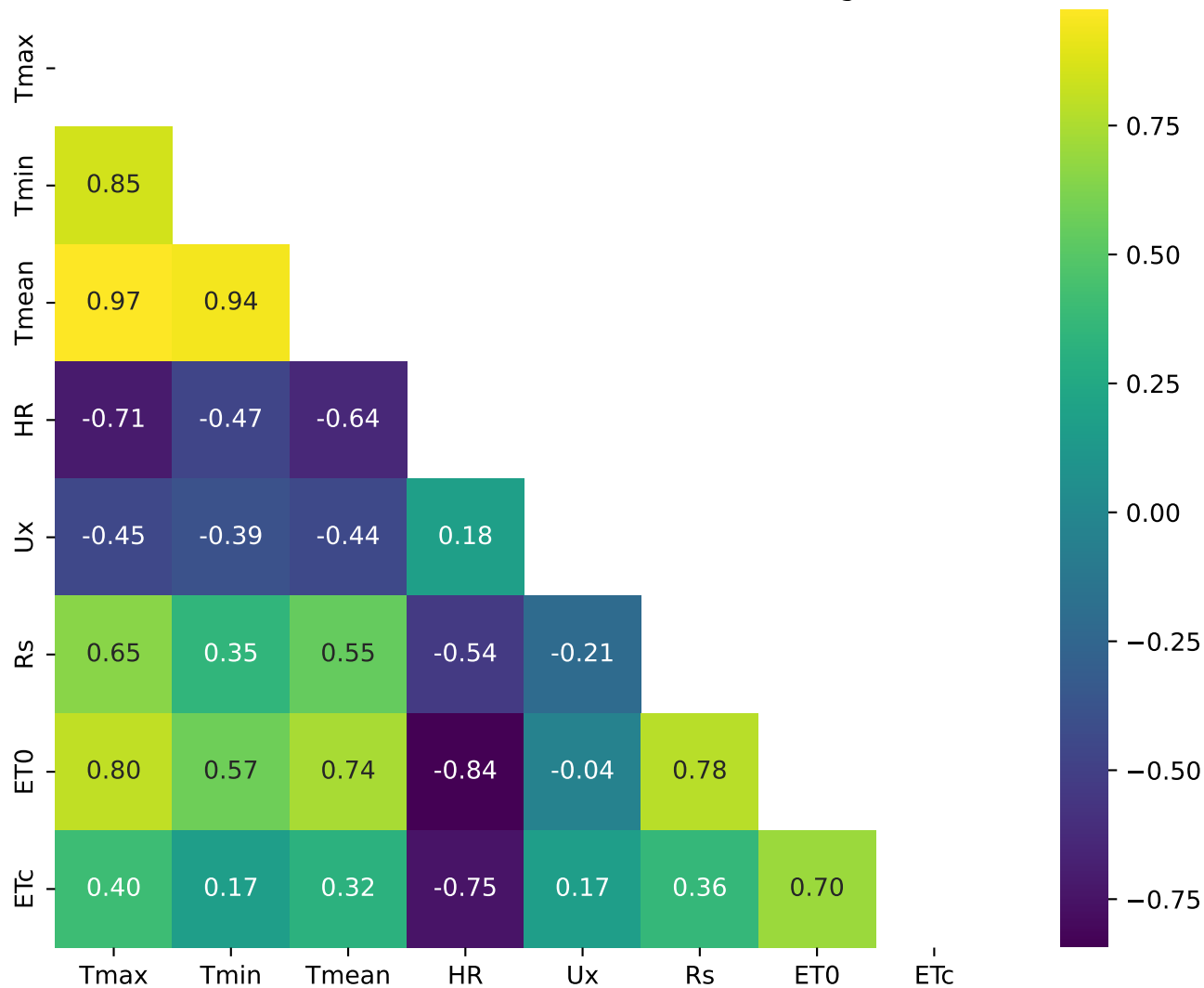
Importancias: {'Tmax': 0.36268682803136265, 'Tmin': 0.01745022111197793, 'HR': 0.346711372418481, 'Ux': 0.0579216571020159, 'Rs': 0.21522992133616248}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 19.288333 | 8.295238 | 64.456905 | 1.993571 | 13.609762 | 2.516255 | 2.138228 |
| 1 | 25.055357 | 12.453214 | 41.347143 | 1.818571 | 14.866786 | 3.638304 | 3.203087 |
| 2 | 19.704444 | 8.393333 | 32.554444 | 5.026667 | 15.392222 | 5.086365 | 4.577728 |
| 3 | 27.664643 | 14.806429 | 50.605000 | 1.826786 | 18.804286 | 4.246264 | 1.698506 |
| 4 | 13.725556 | 7.739167 | 85.404167 | 3.007500 | 8.686111 | 1.381586 | 1.201413 |

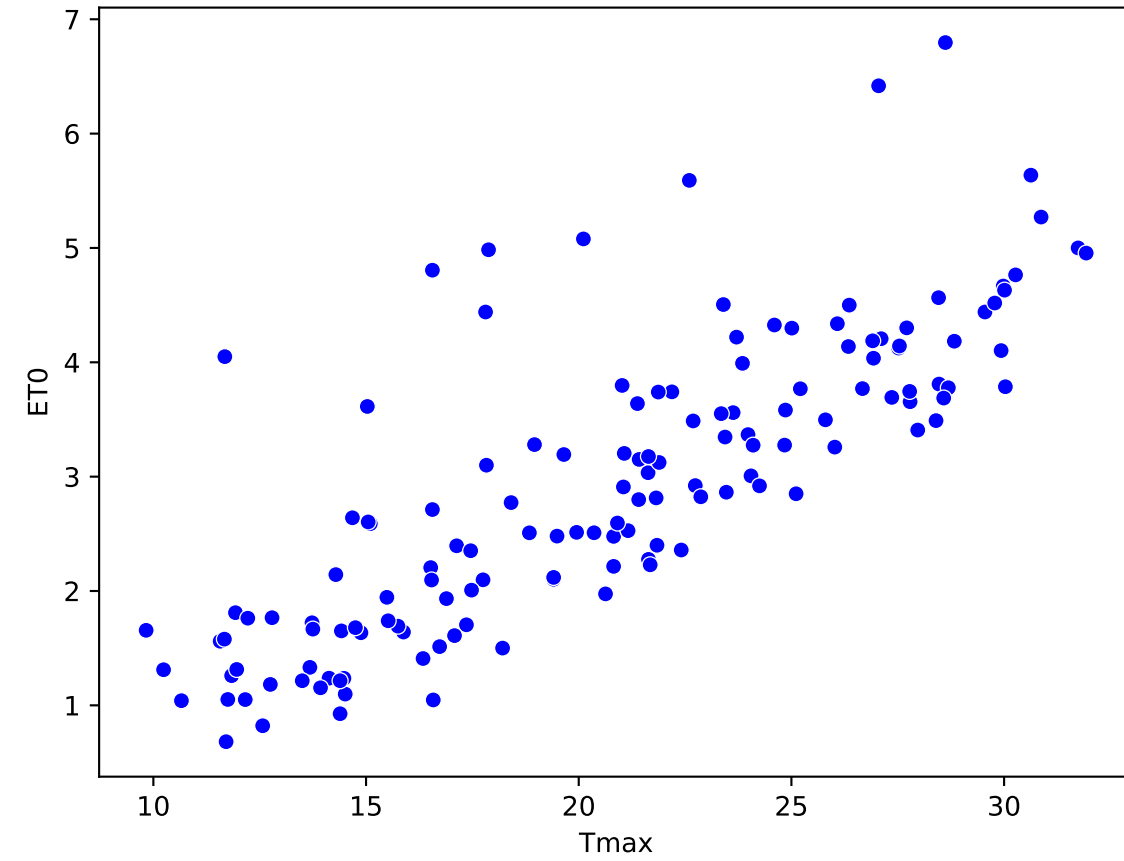
Ensenada — 2016-2017

Matriz de Correlación entre Variables Meteorológicas

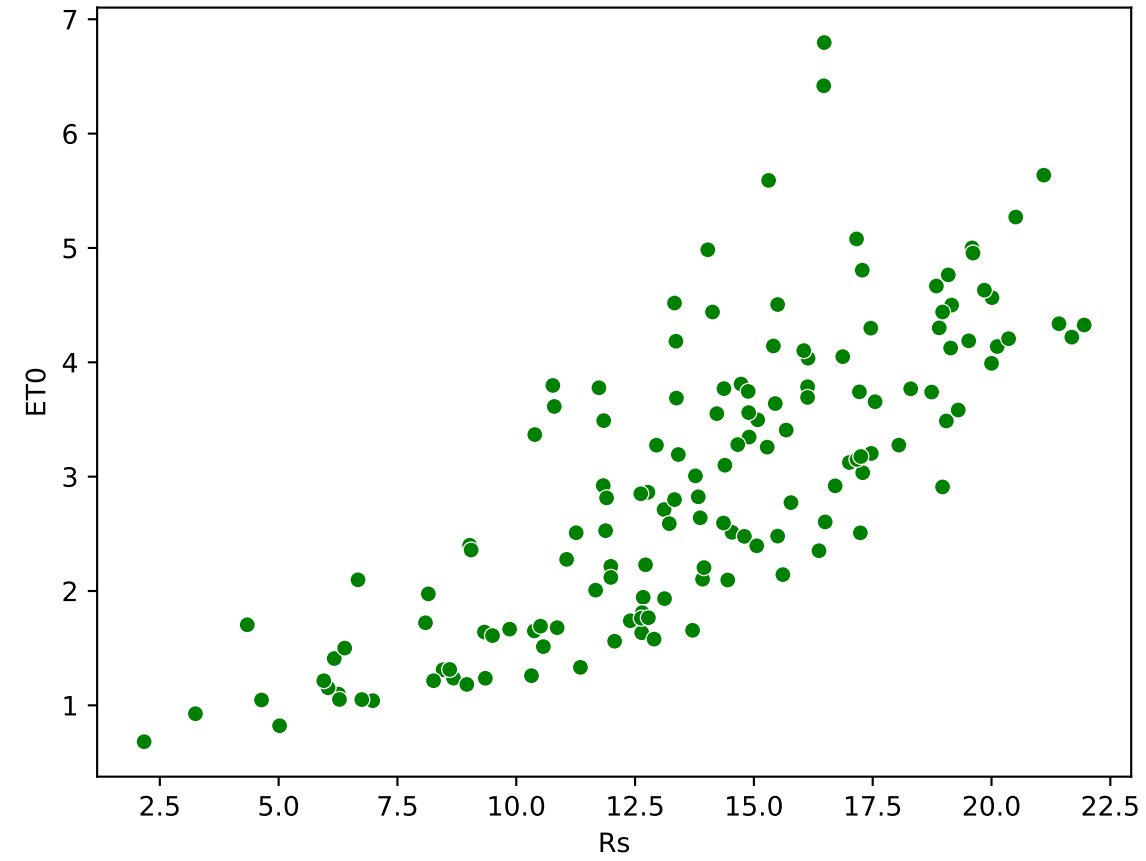


Dispersión — Ensenada (2016-2017)

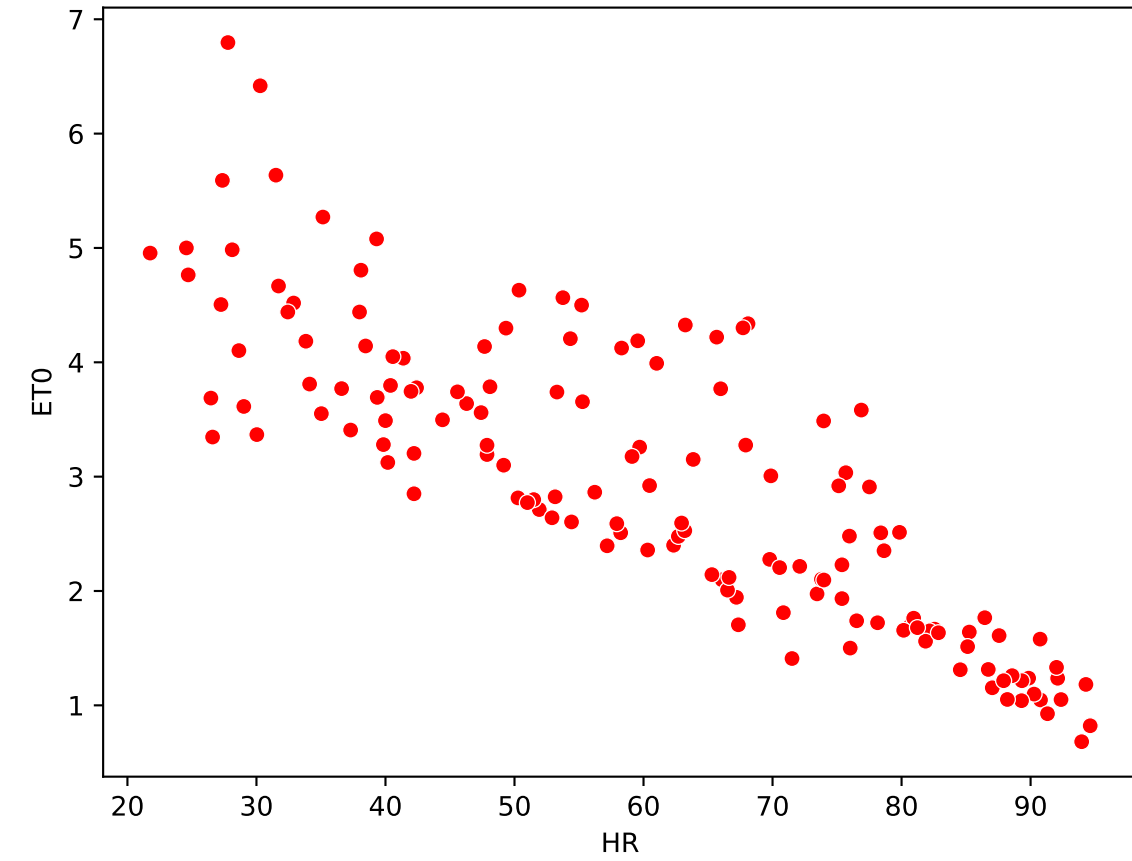
Tmax vs ET0



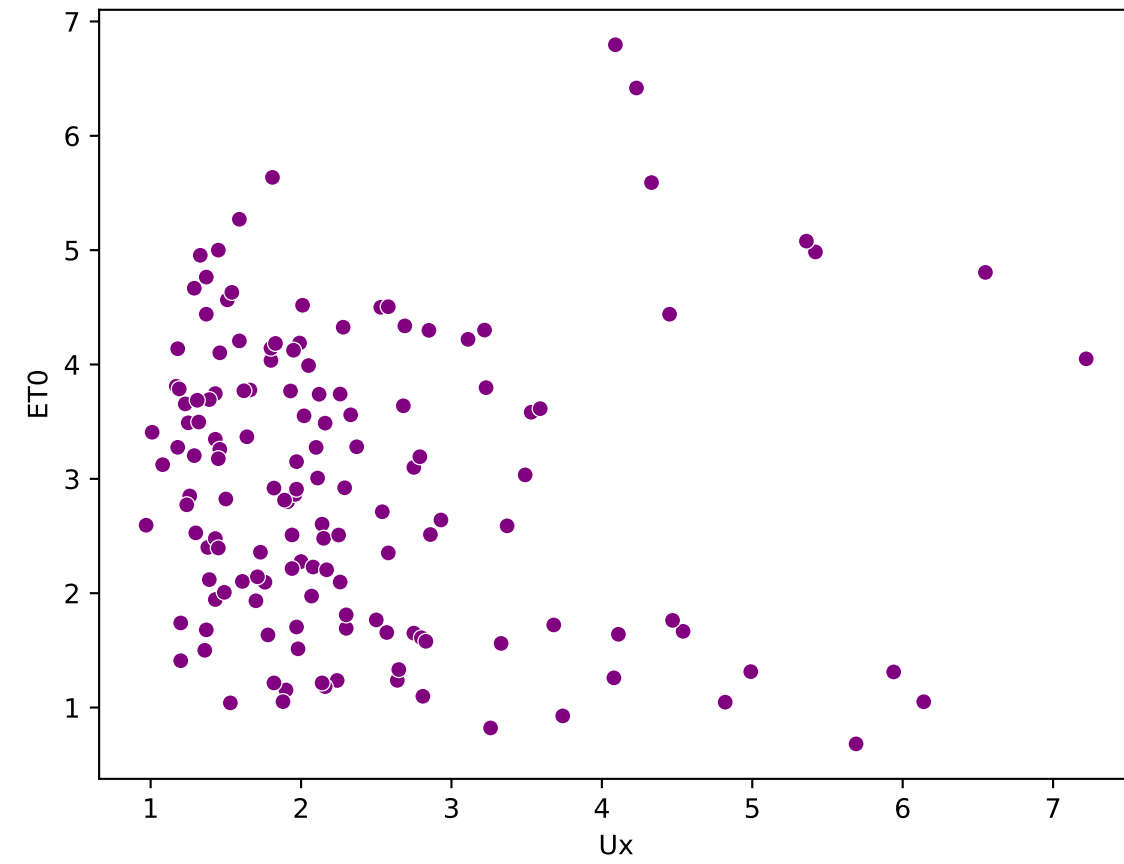
Rs vs ET0



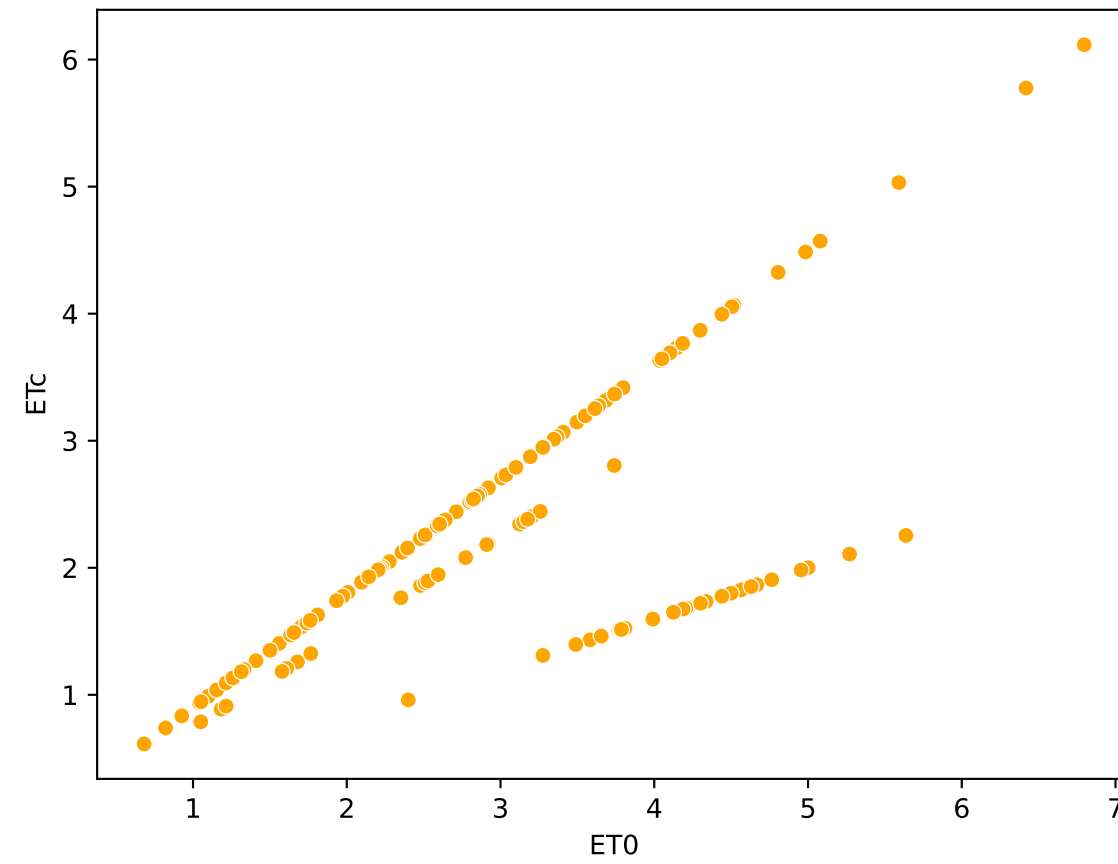
HR vs ET0



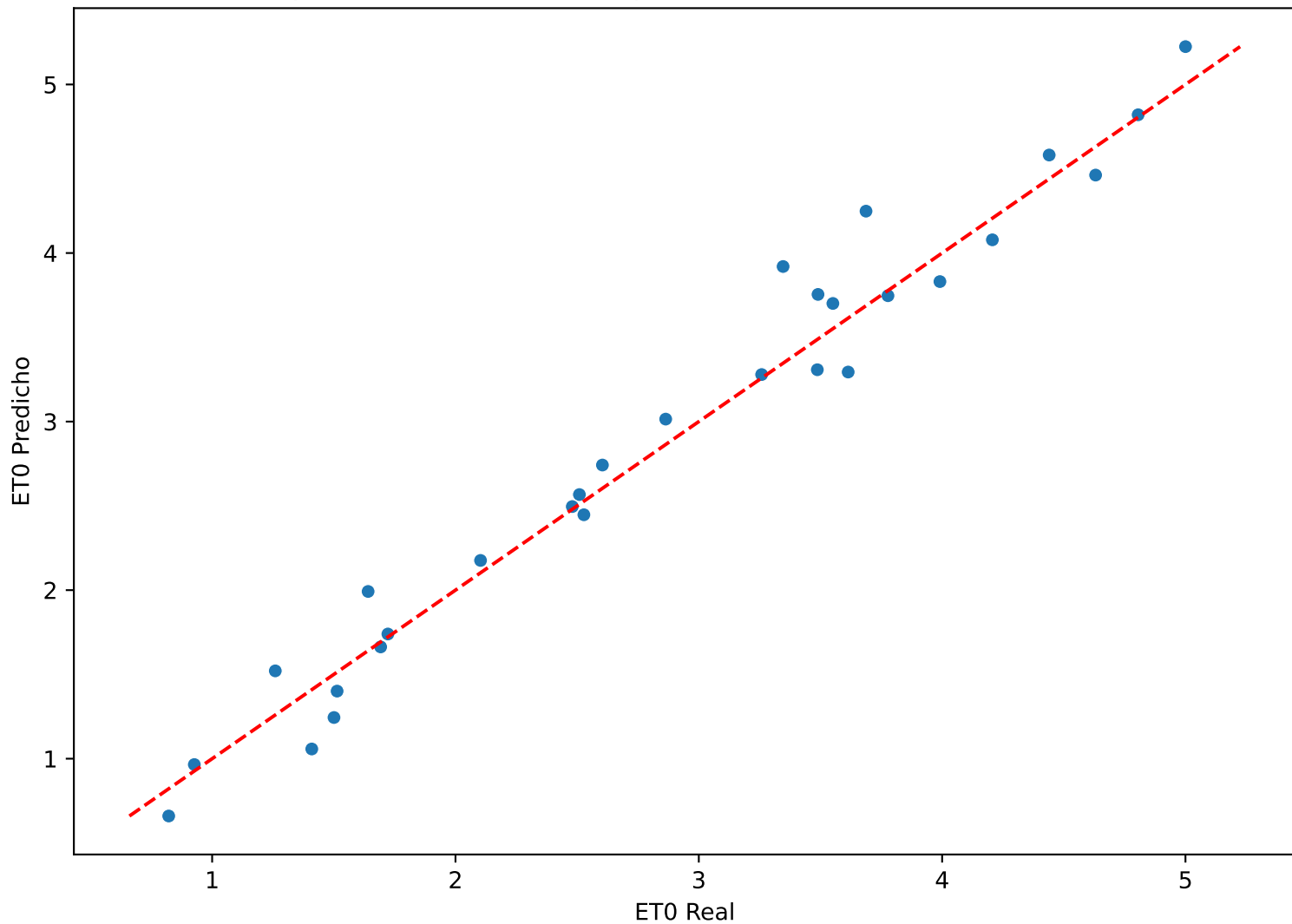
Ux vs ET0



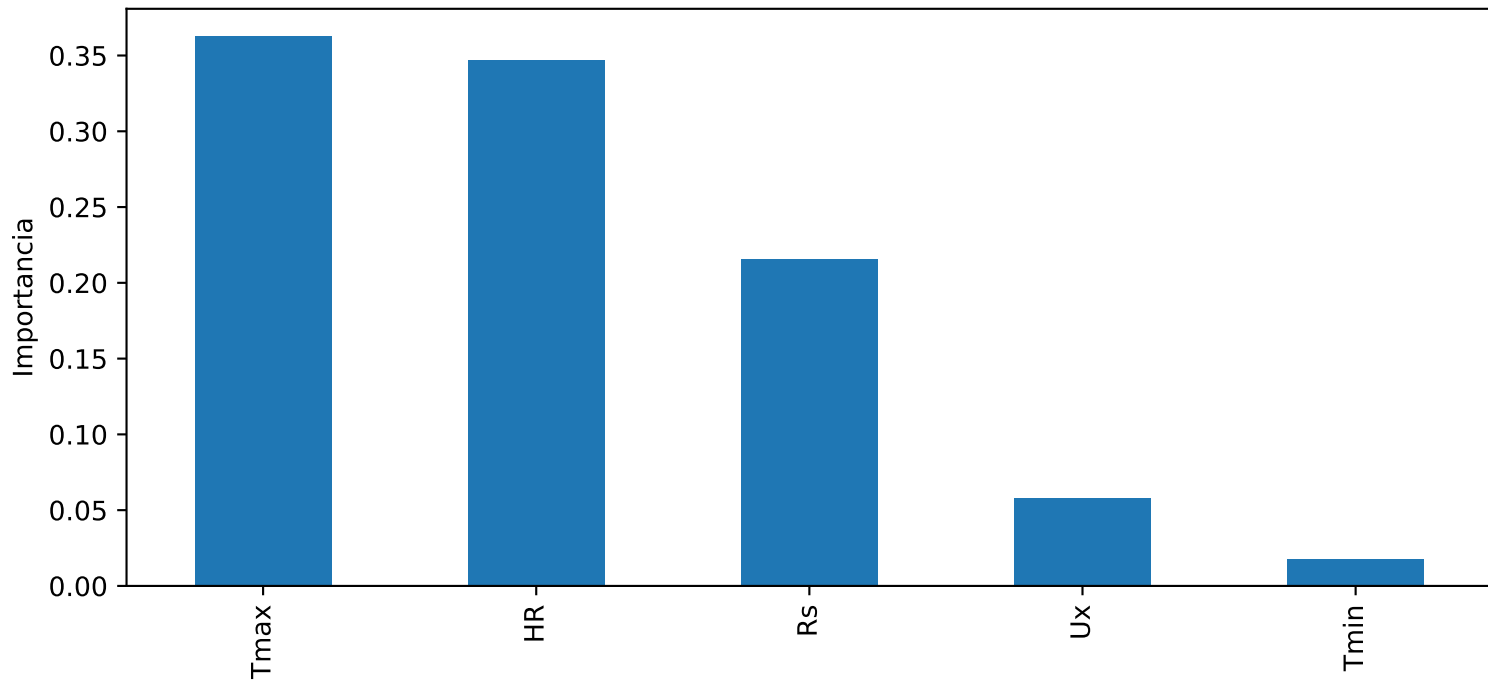
ET0 vs ETc



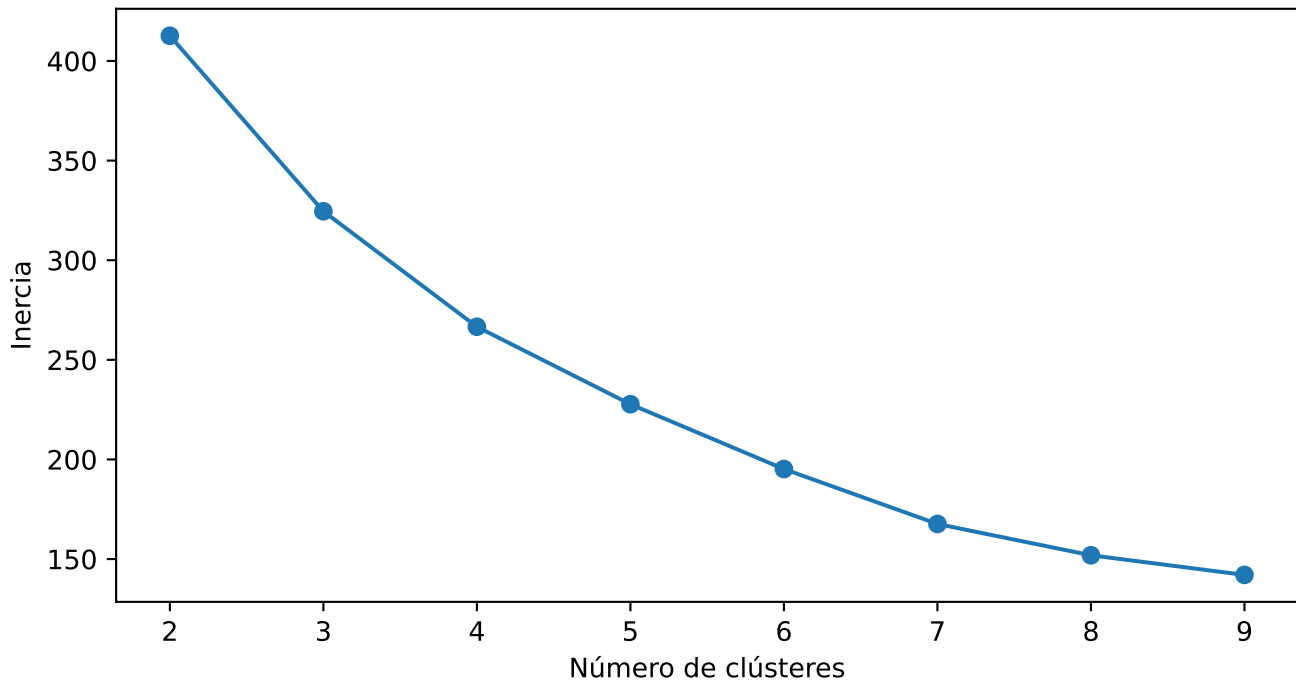
Comparación entre ET0 Real y Predicho — Ensenada (2016-2017)



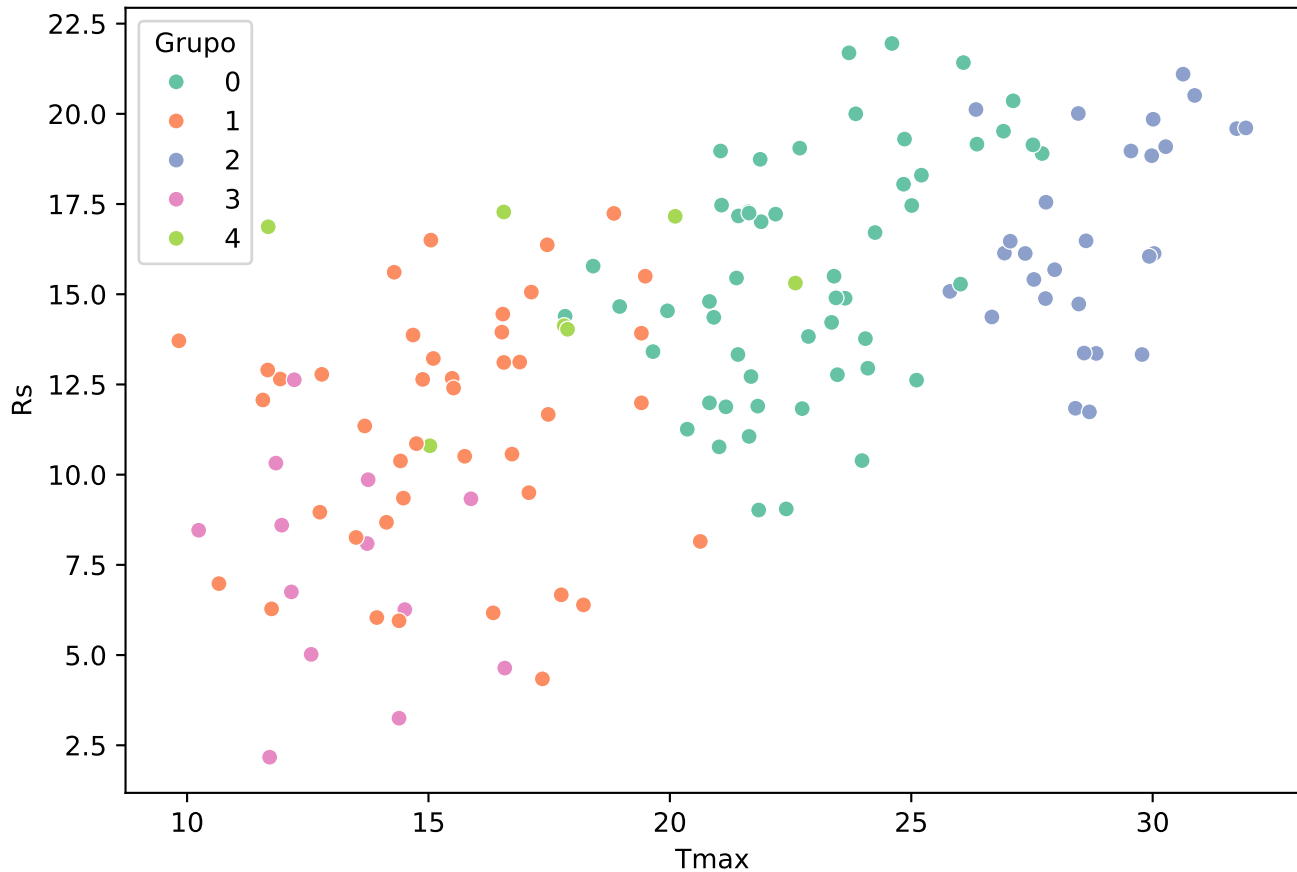
Importancia de variables (RF) — Ensenada (2016-2017)



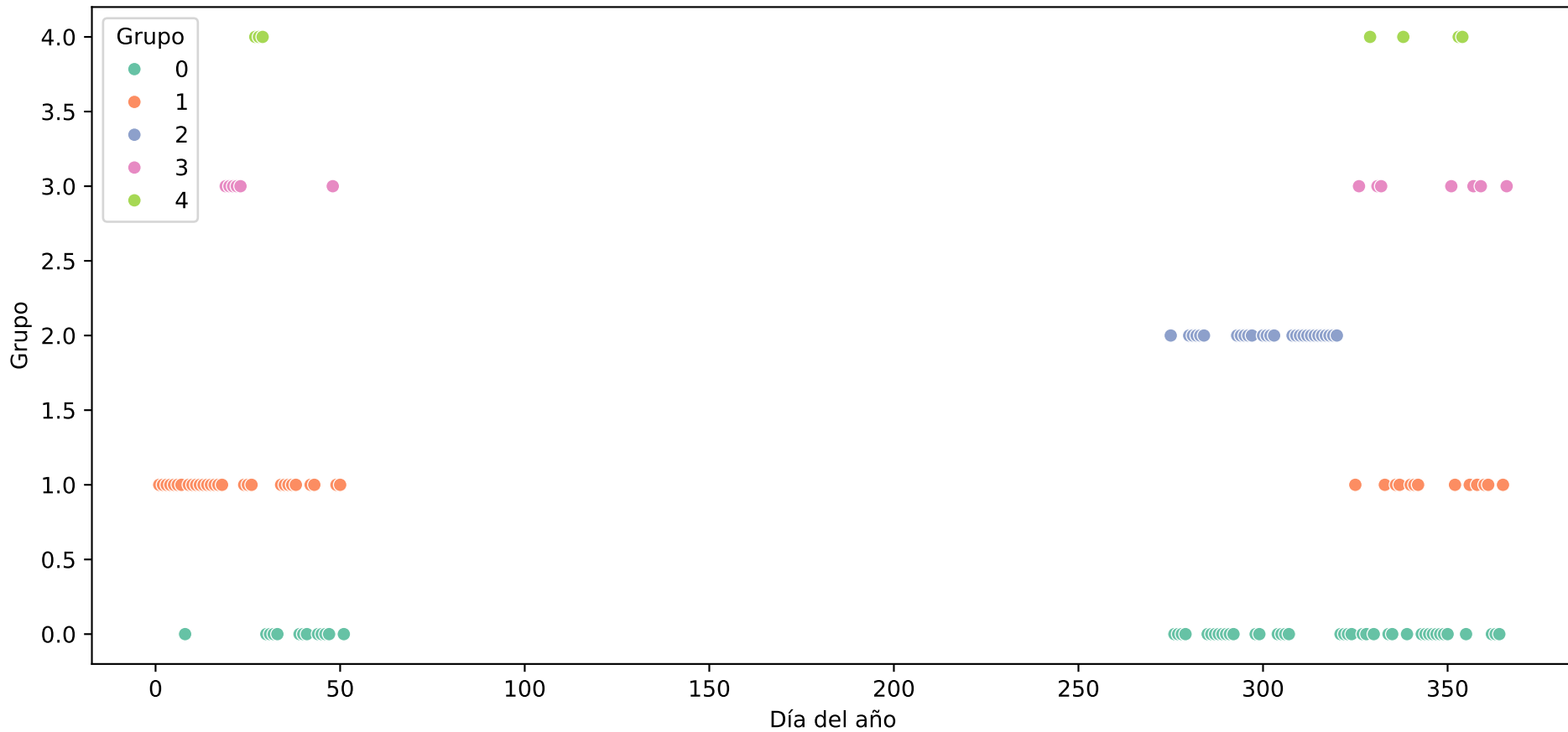
Método del codo



Clasificación de días climáticos — Ensenada (2016-2017)

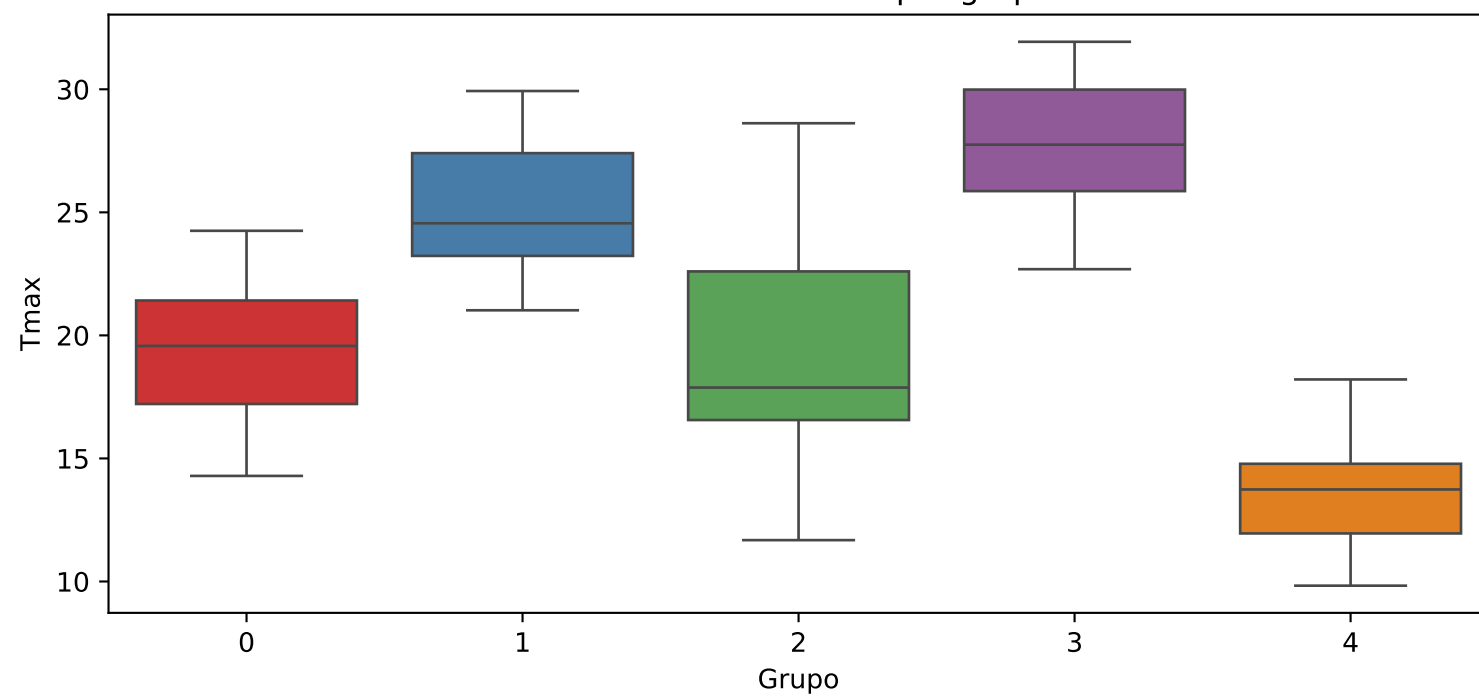


Distribución de días por grupo — Ensenada (2016-2017)

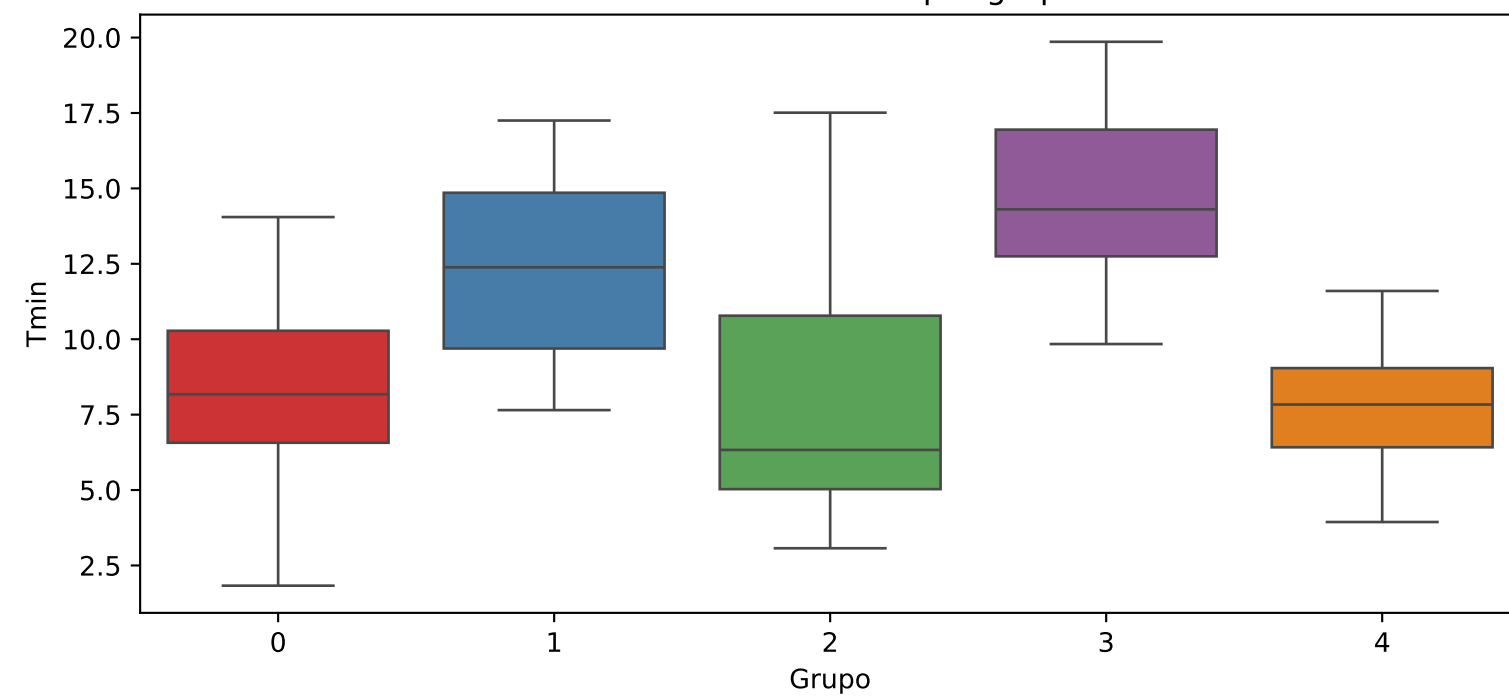


Boxplots por grupo — Ensenada (2016-2017)

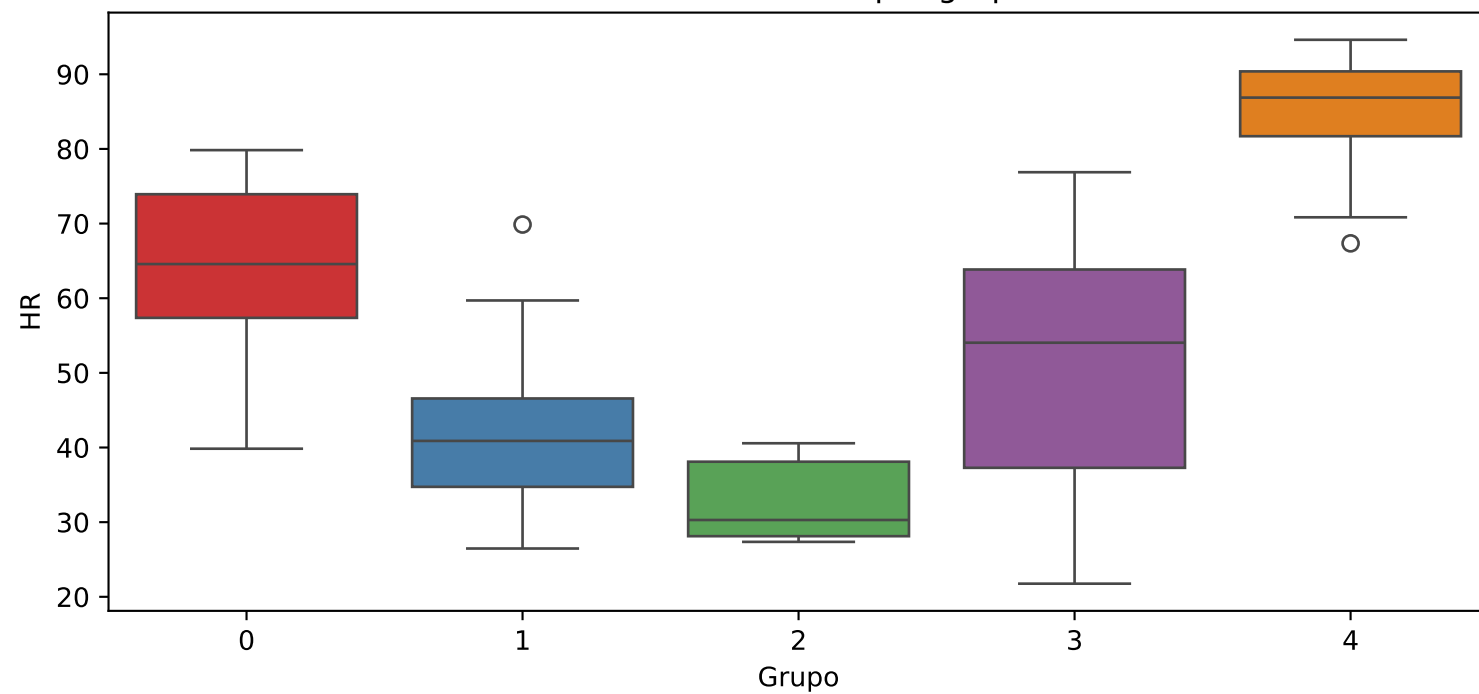
Distribución de Tmax por grupo



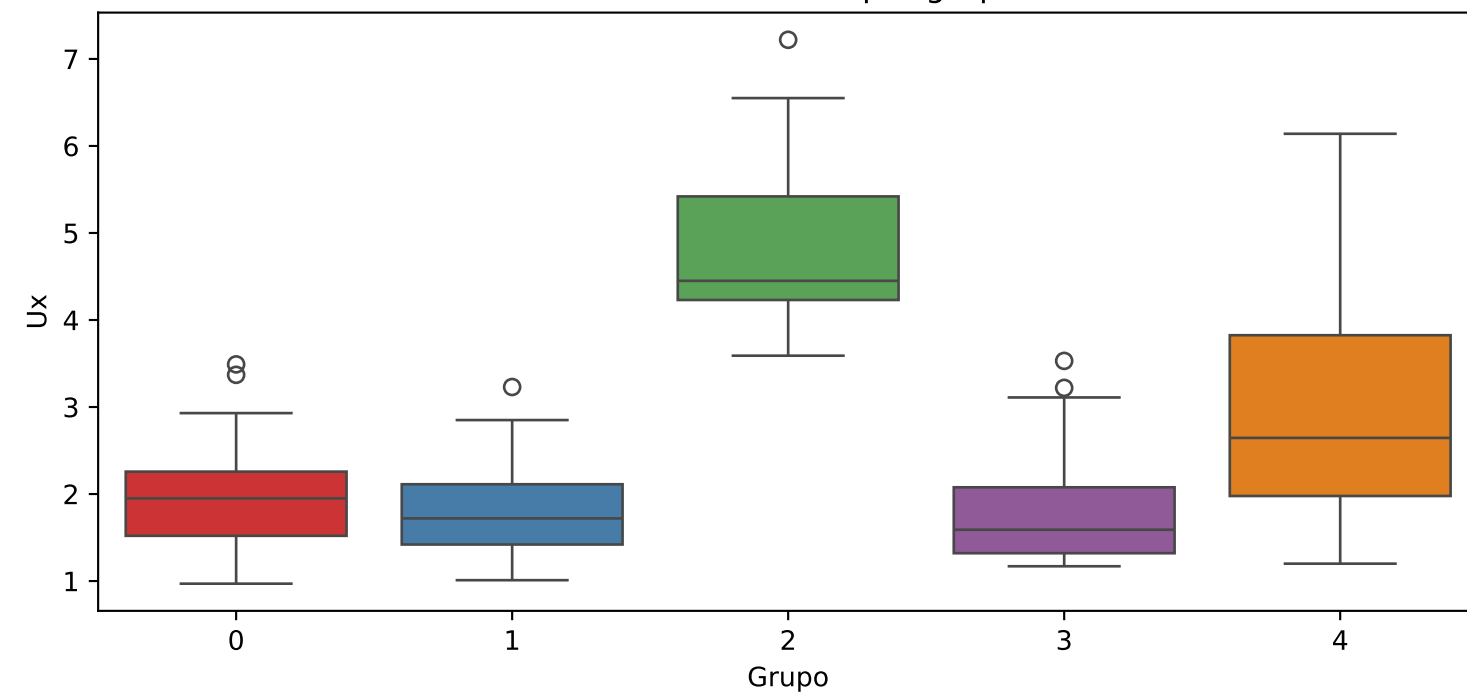
Distribución de Tmin por grupo



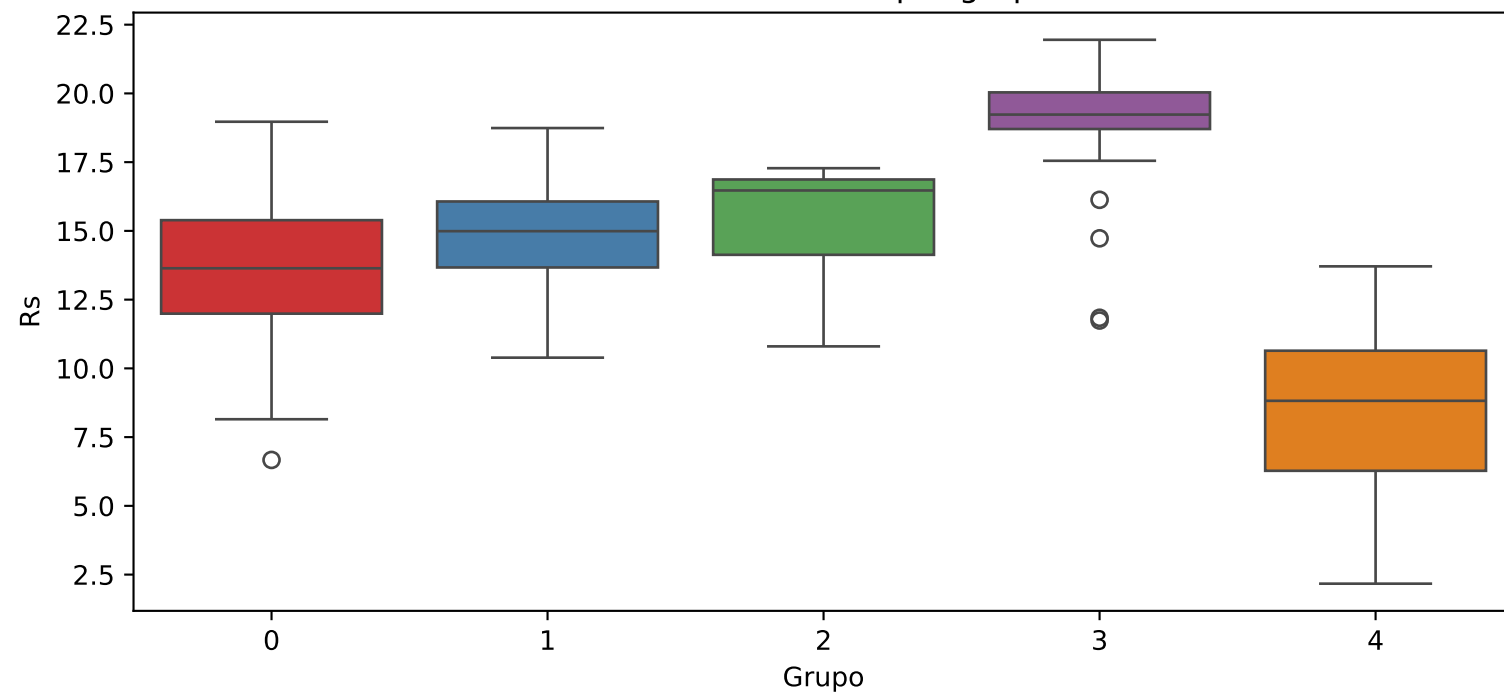
Distribución de HR por grupo



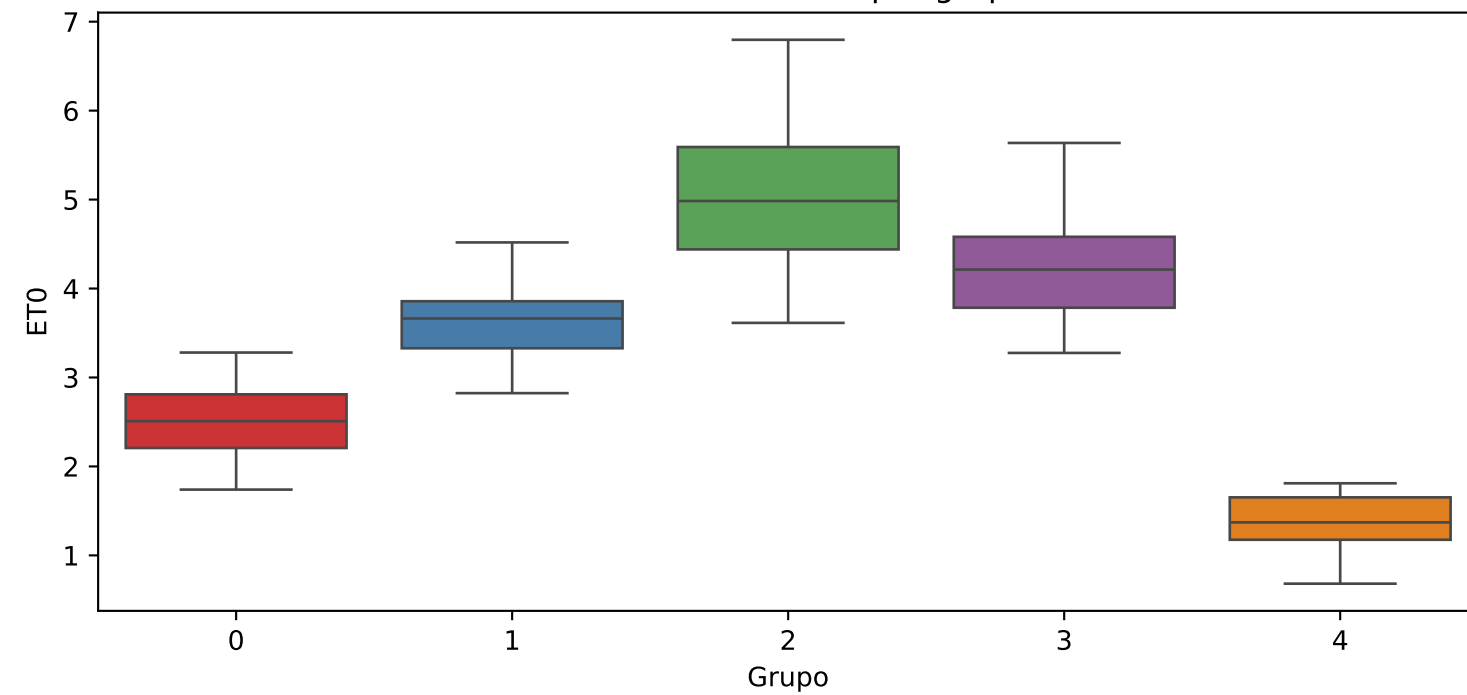
Distribución de Ux por grupo



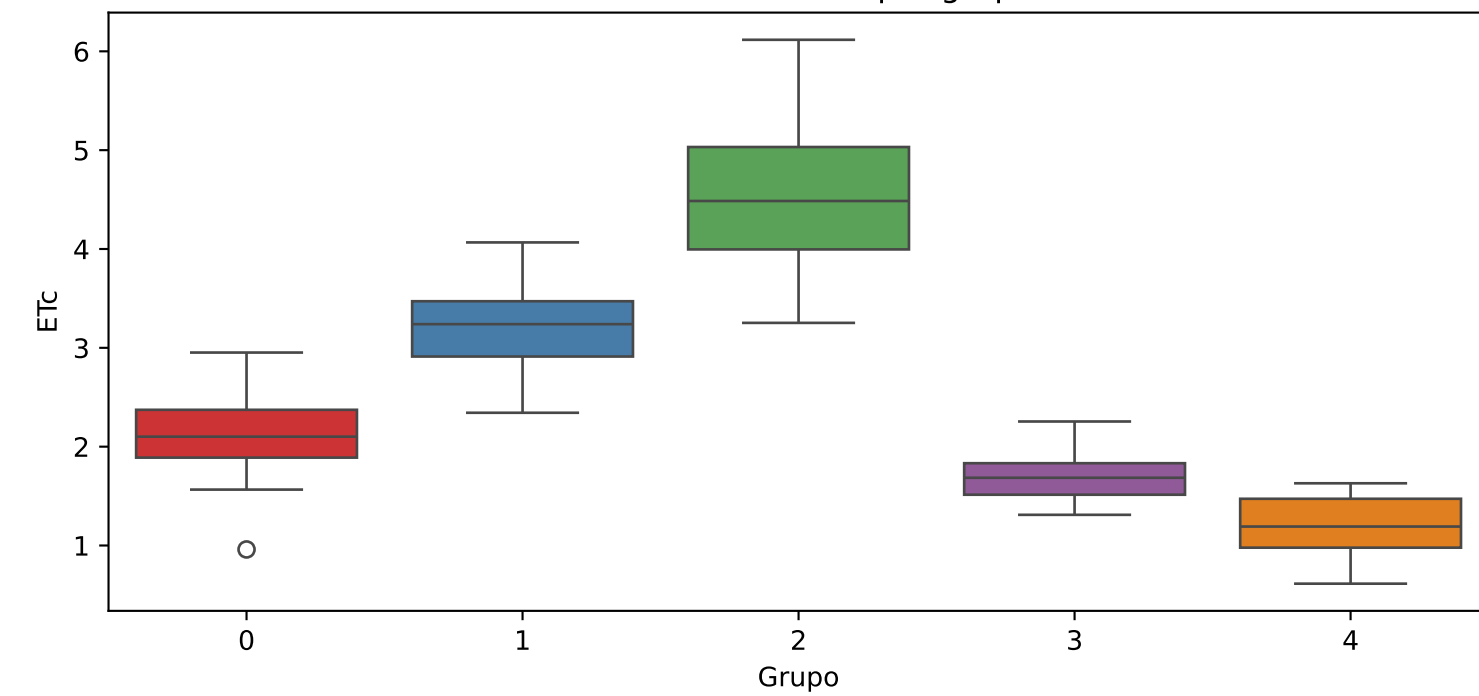
Distribución de Rs por grupo



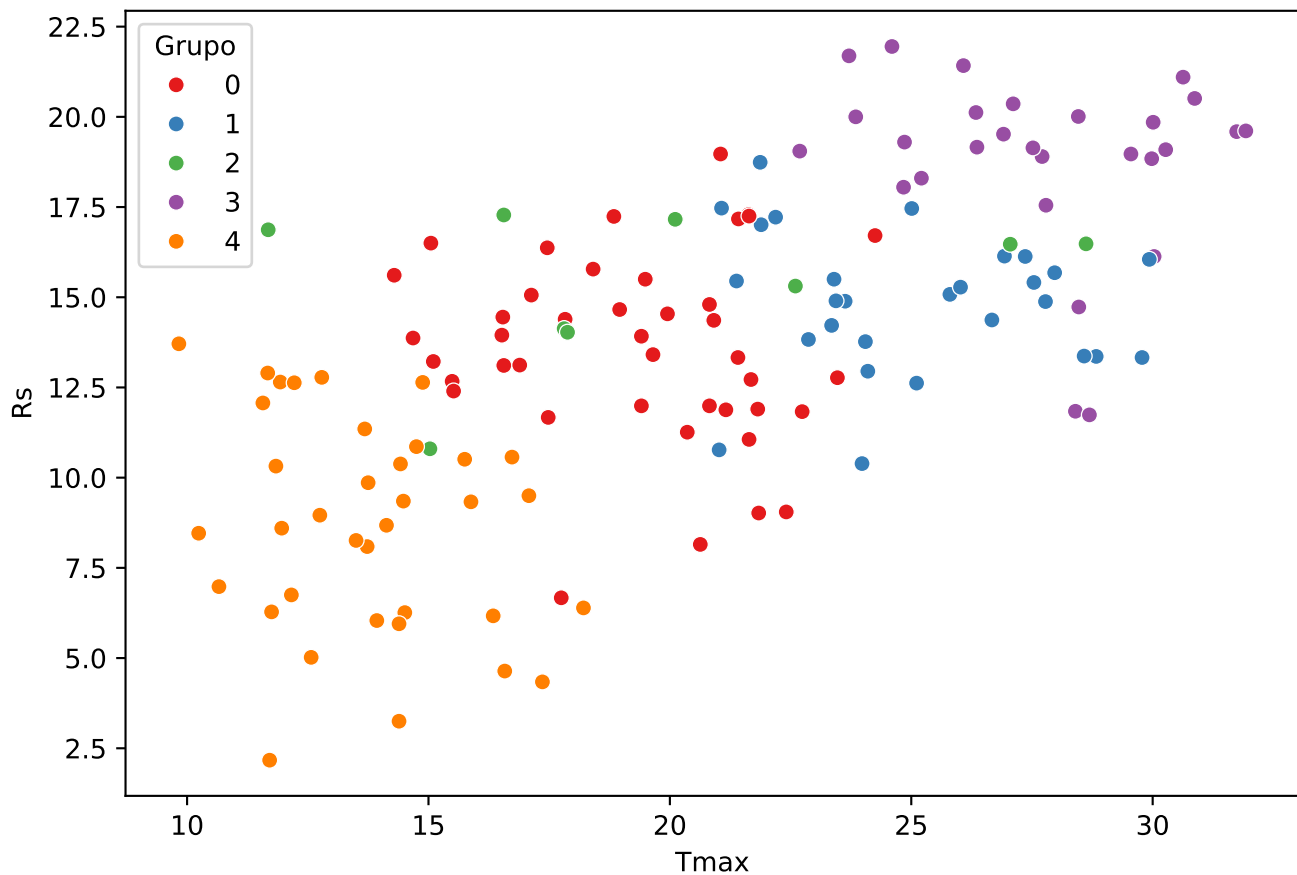
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2016-2017)



Ensenada — 2017-2018

Días del ciclo: 143

ETc total [mm]: 373.0

ETverde total [mm]: 8.8

ETazul total [mm]: 364.2

Tmax / Tmin [°C]: 34.9 / 2.4

Ensenada — 2017-2018 · Resultados y métricas

[Ensenada 2017-2018] Regresión Lineal ET0 — R^2 : 0.7967 MSE: 0.2445

[Ensenada 2017-2018] Random Forest ET0 — R^2 : 0.9153 MSE: 0.1018

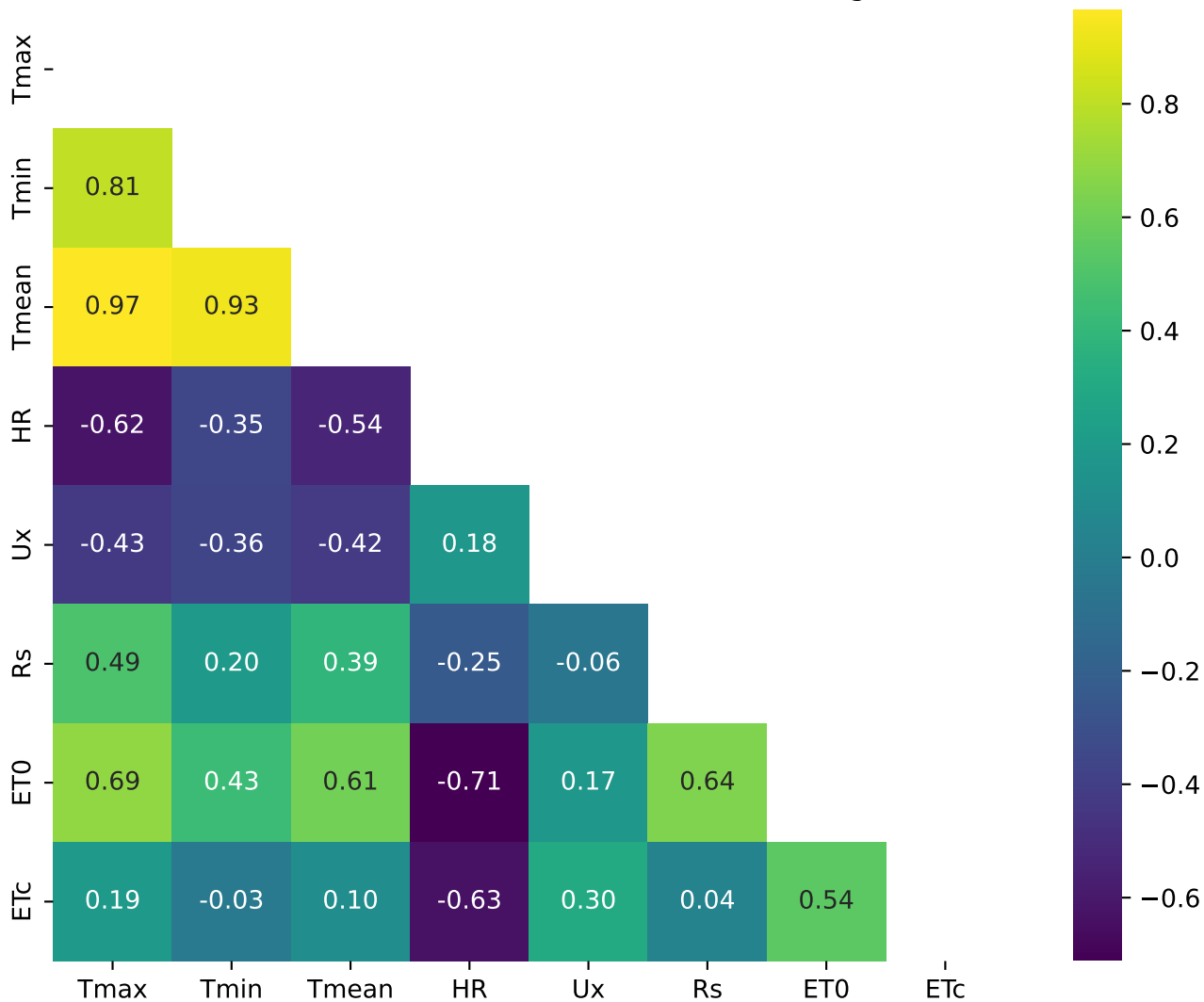
Importancias: {'Tmax': 0.23298595048929083, 'Tmin': 0.015447547955691697, 'HR': 0.5017396484449782, 'Ux': 0.09192649202262099, 'Rs': 0.15790036108741826}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 22.393953 | 11.726977 | 52.852326 | 1.539535 | 12.193488 | 2.775214 | 2.259519 |
| 1 | 30.727000 | 16.201500 | 31.767000 | 1.732500 | 19.406000 | 5.176388 | 2.070555 |
| 2 | 17.753333 | 8.985333 | 72.367667 | 2.897000 | 13.724667 | 2.496436 | 1.931024 |
| 3 | 26.530000 | 13.193333 | 32.114242 | 1.535152 | 15.000000 | 3.735874 | 3.173128 |
| 4 | 21.371765 | 9.422941 | 29.526471 | 3.504706 | 13.897059 | 4.691067 | 4.221960 |

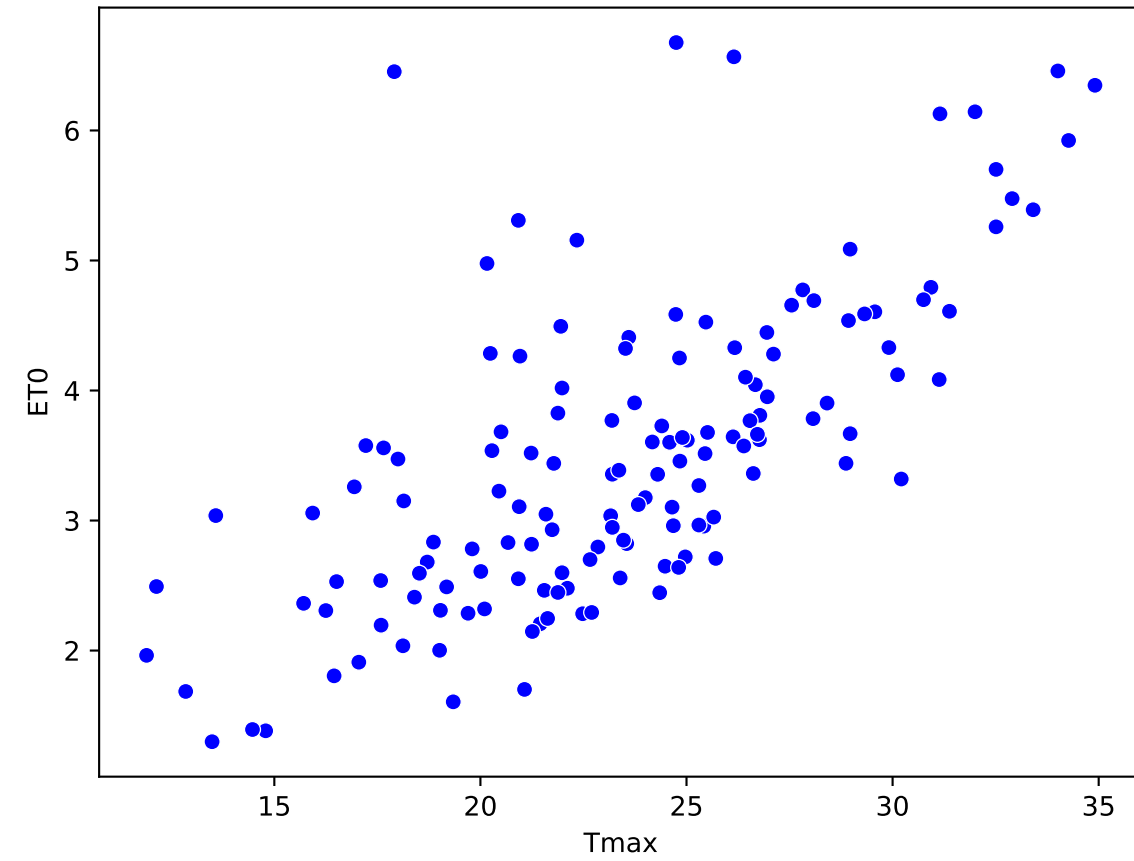
Ensenada — 2017-2018

Matriz de Correlación entre Variables Meteorológicas

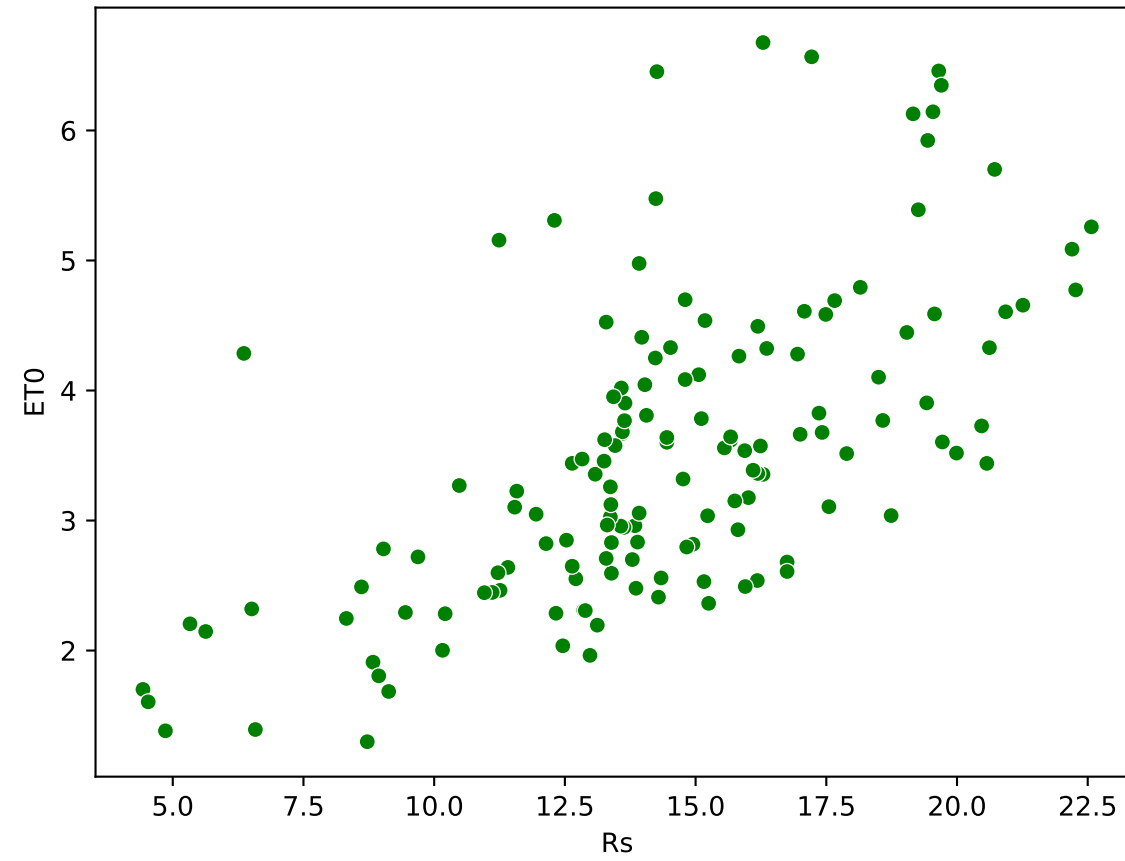


Dispersión — Ensenada (2017-2018)

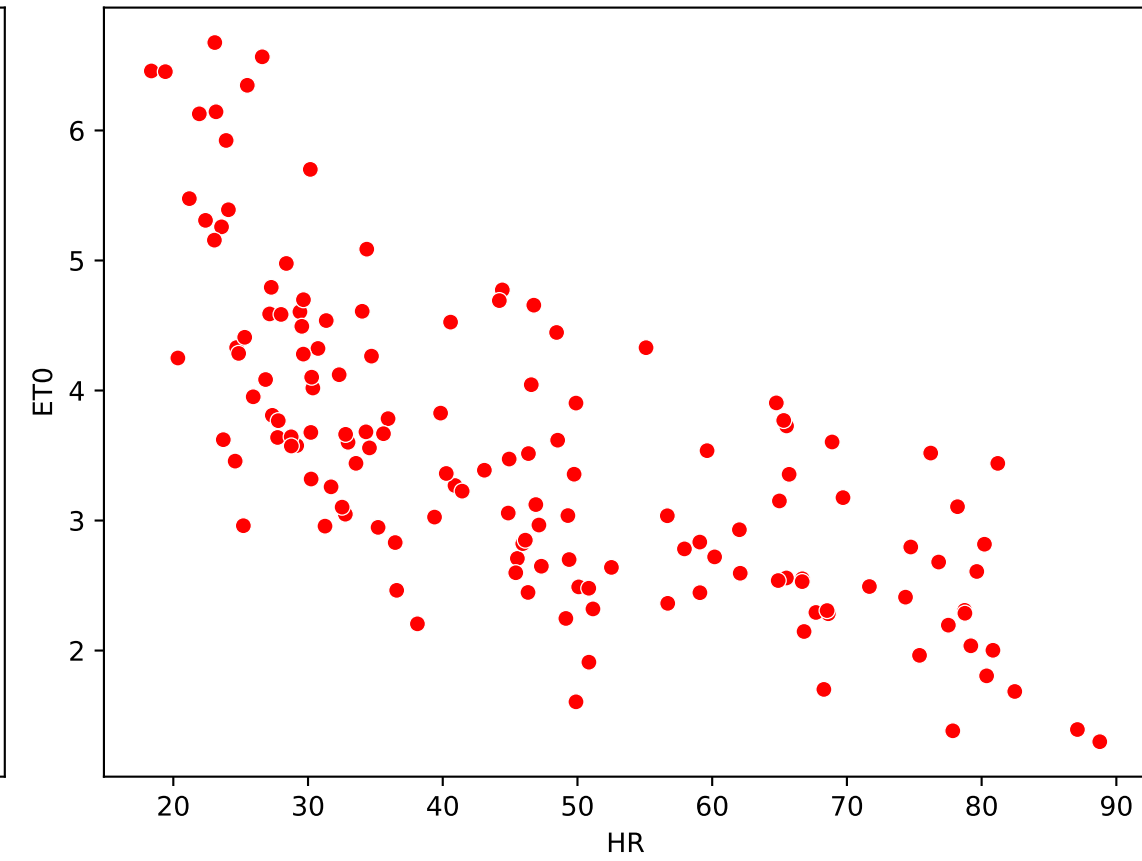
Tmax vs ET0



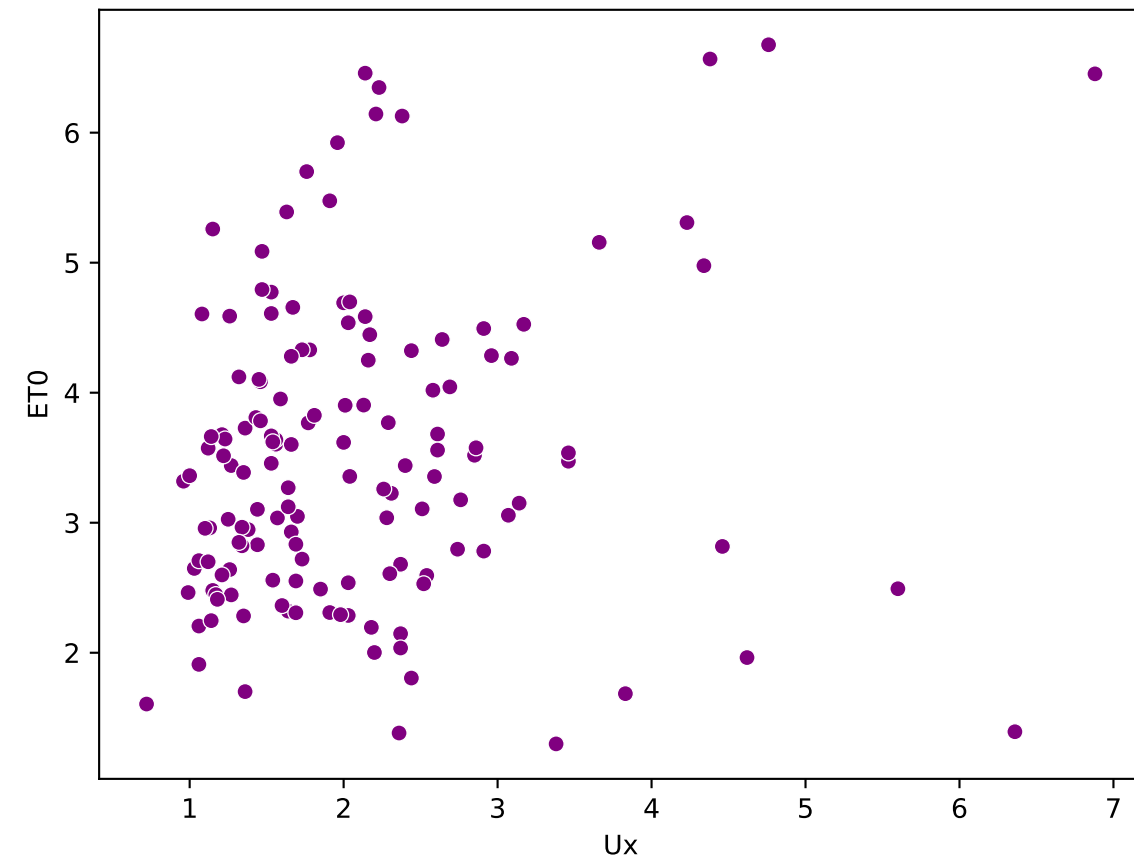
Rs vs ET0



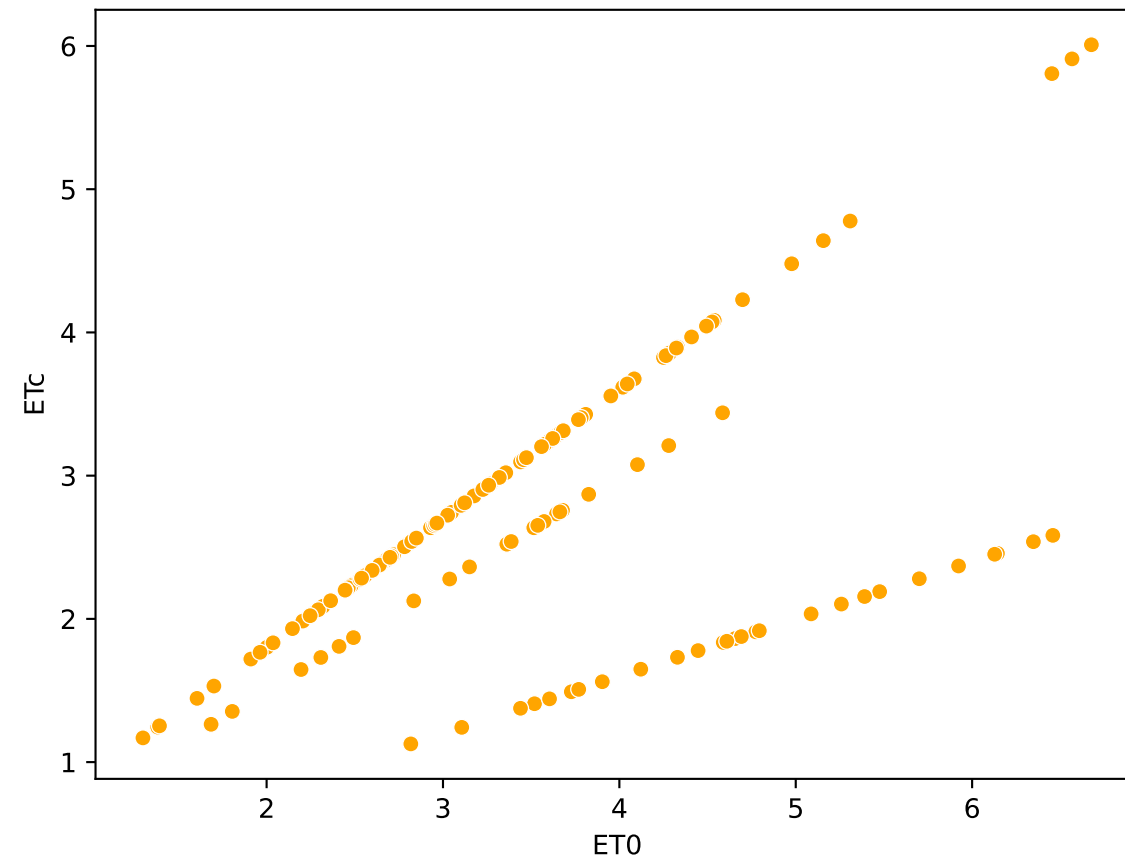
HR vs ET0



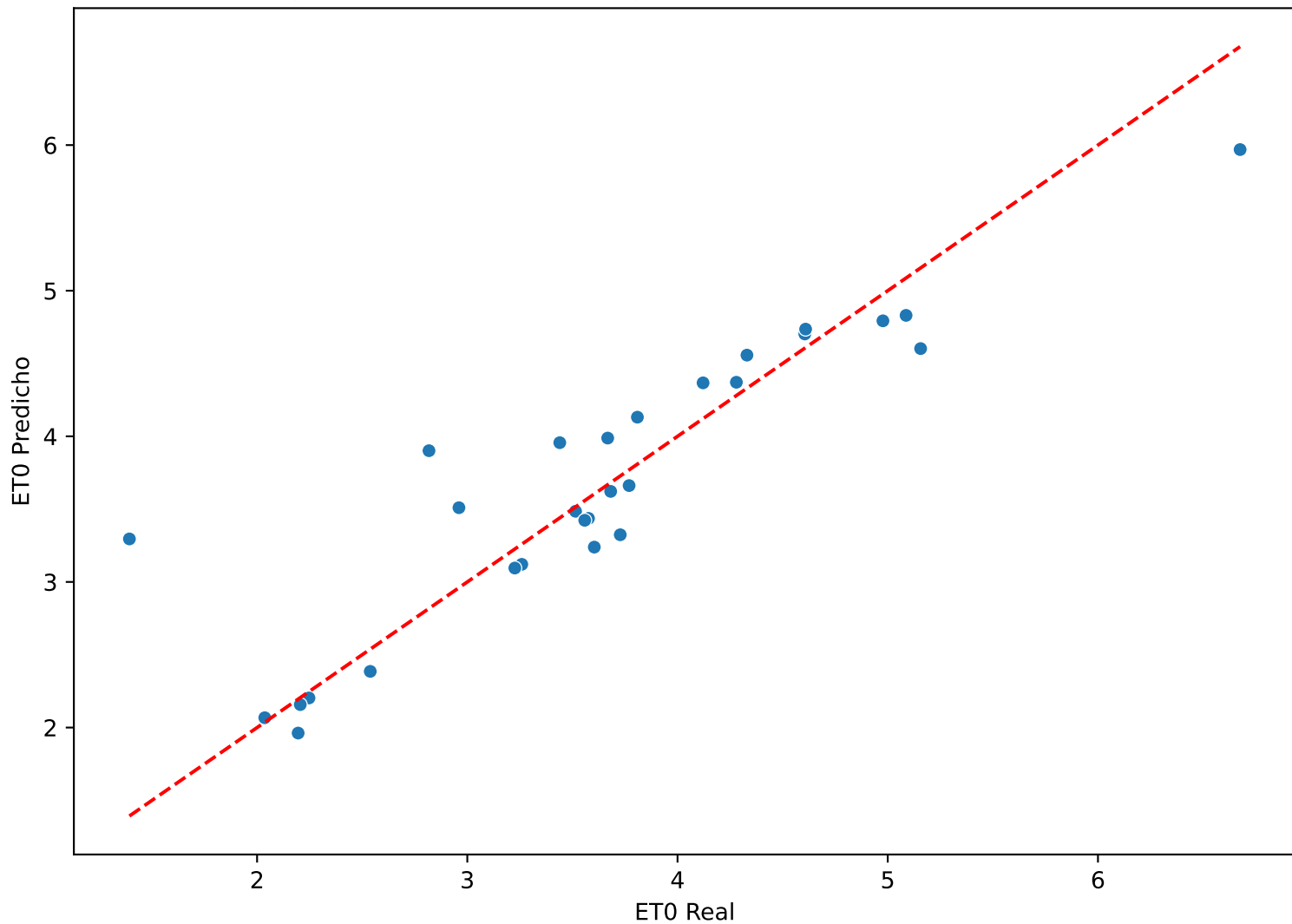
Ux vs ET0



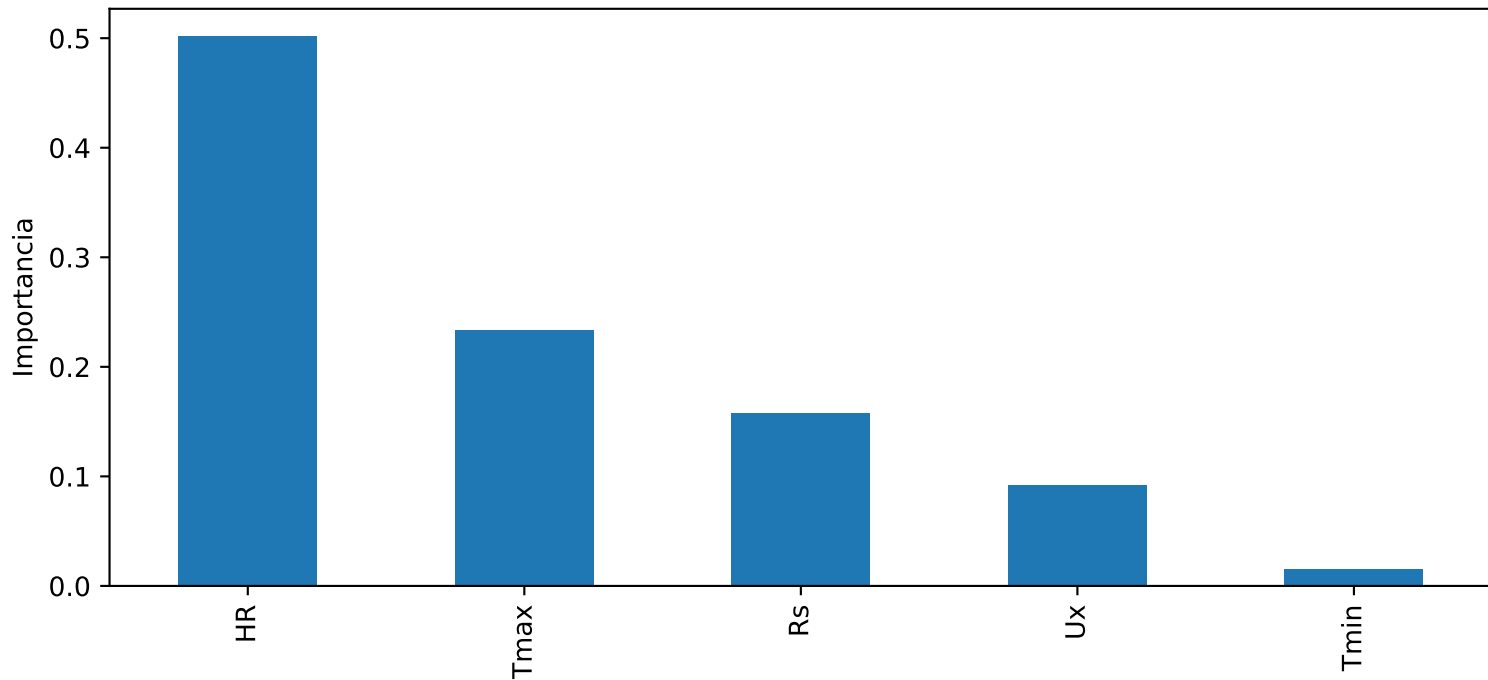
ET0 vs ETc



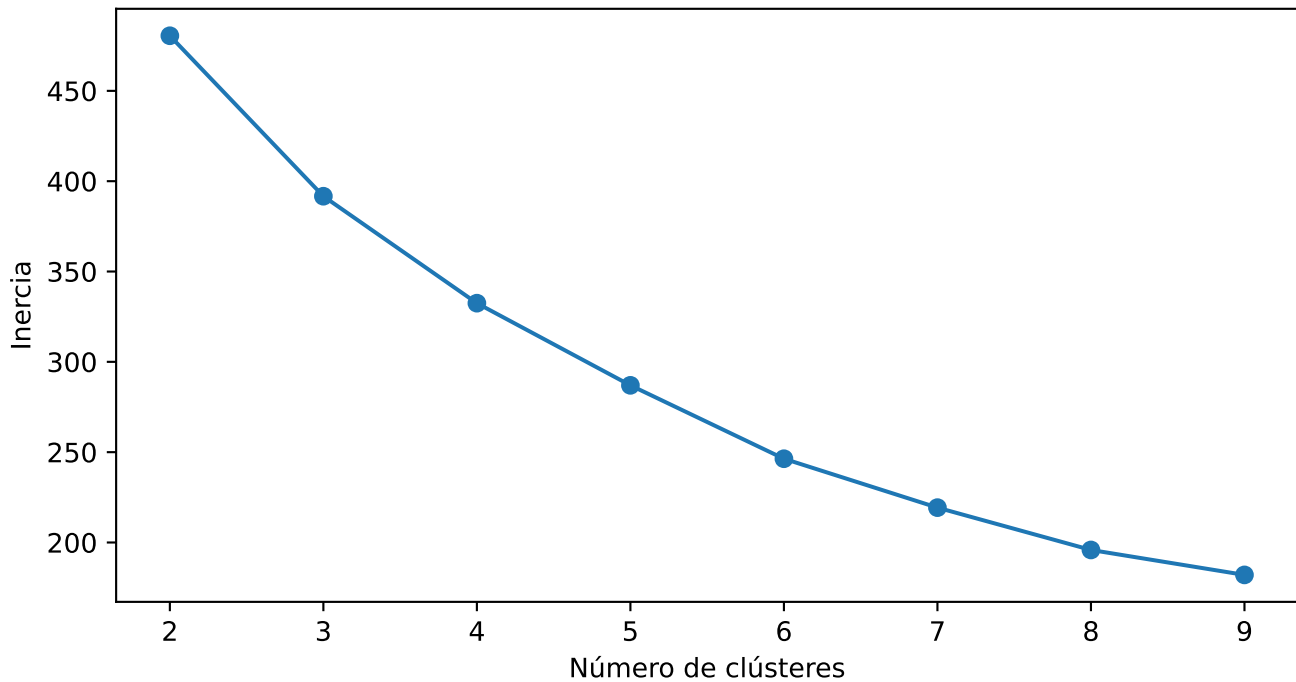
Comparación entre ET0 Real y Predicho — Ensenada (2017-2018)



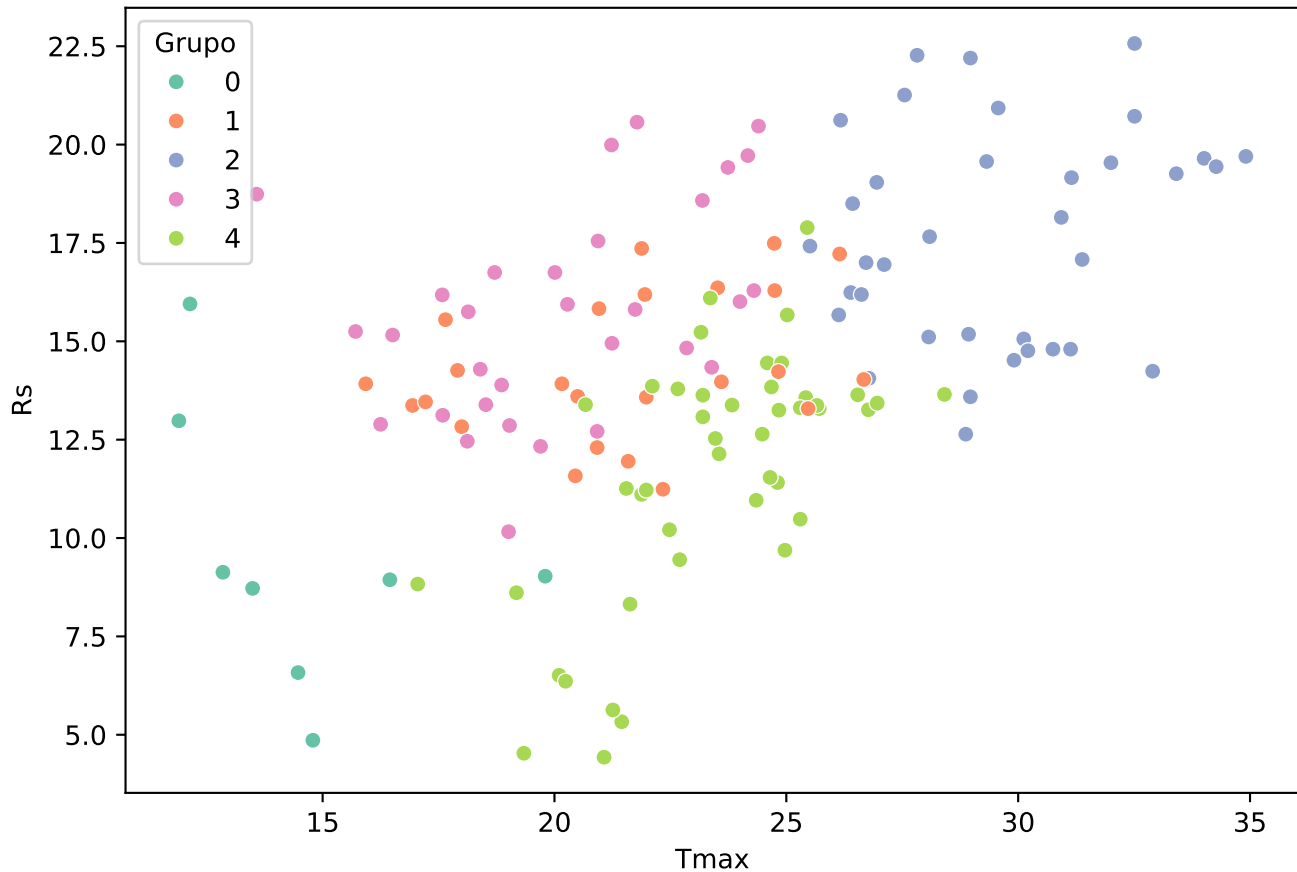
Importancia de variables (RF) — Ensenada (2017-2018)



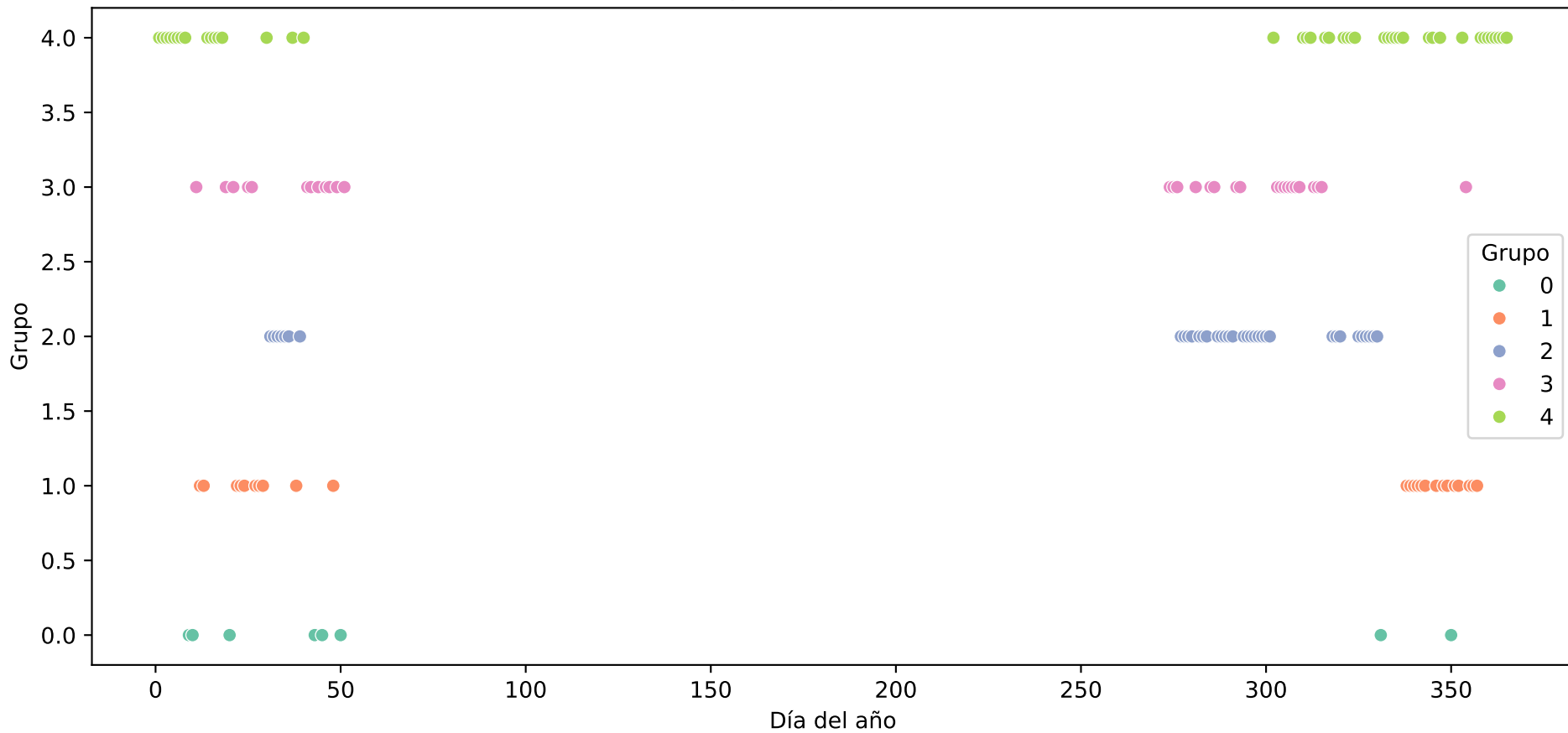
Método del codo



Clasificación de días climáticos — Ensenada (2017-2018)

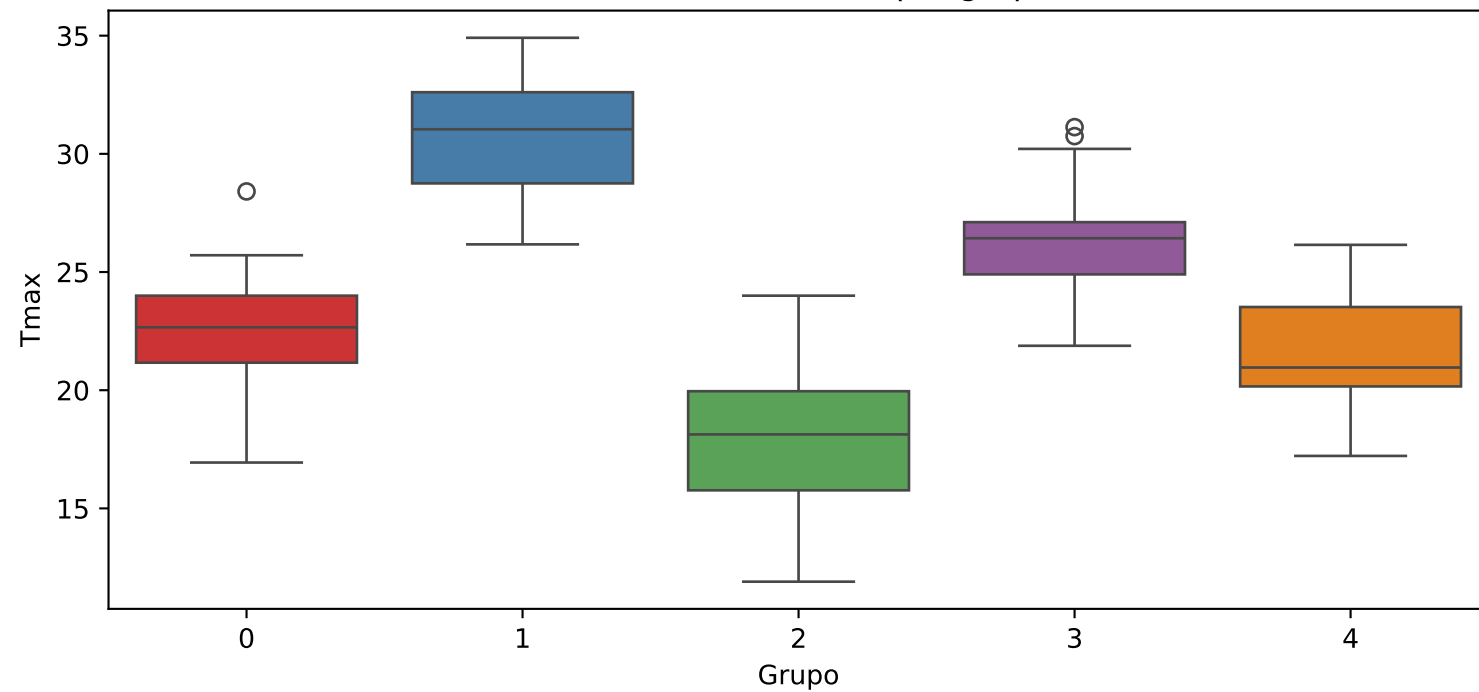


Distribución de días por grupo — Ensenada (2017-2018)

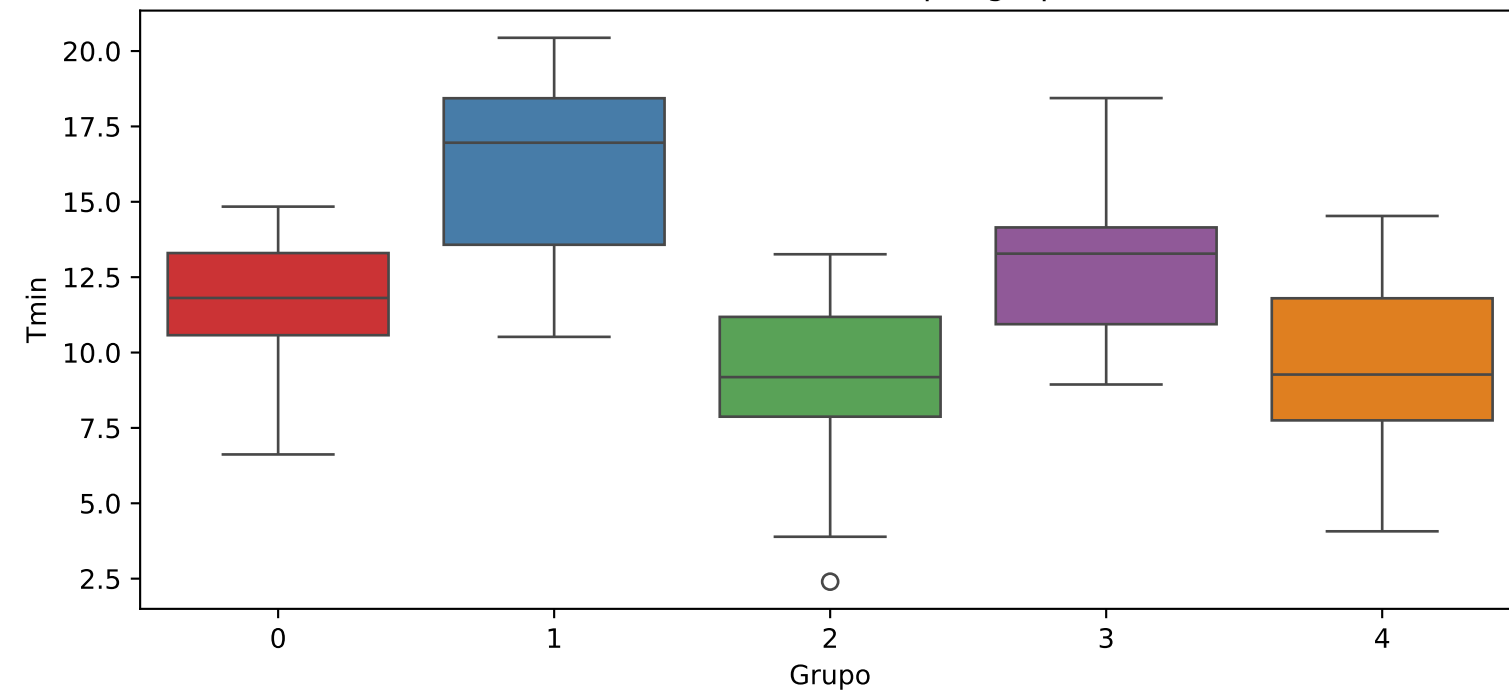


Boxplots por grupo — Ensenada (2017-2018)

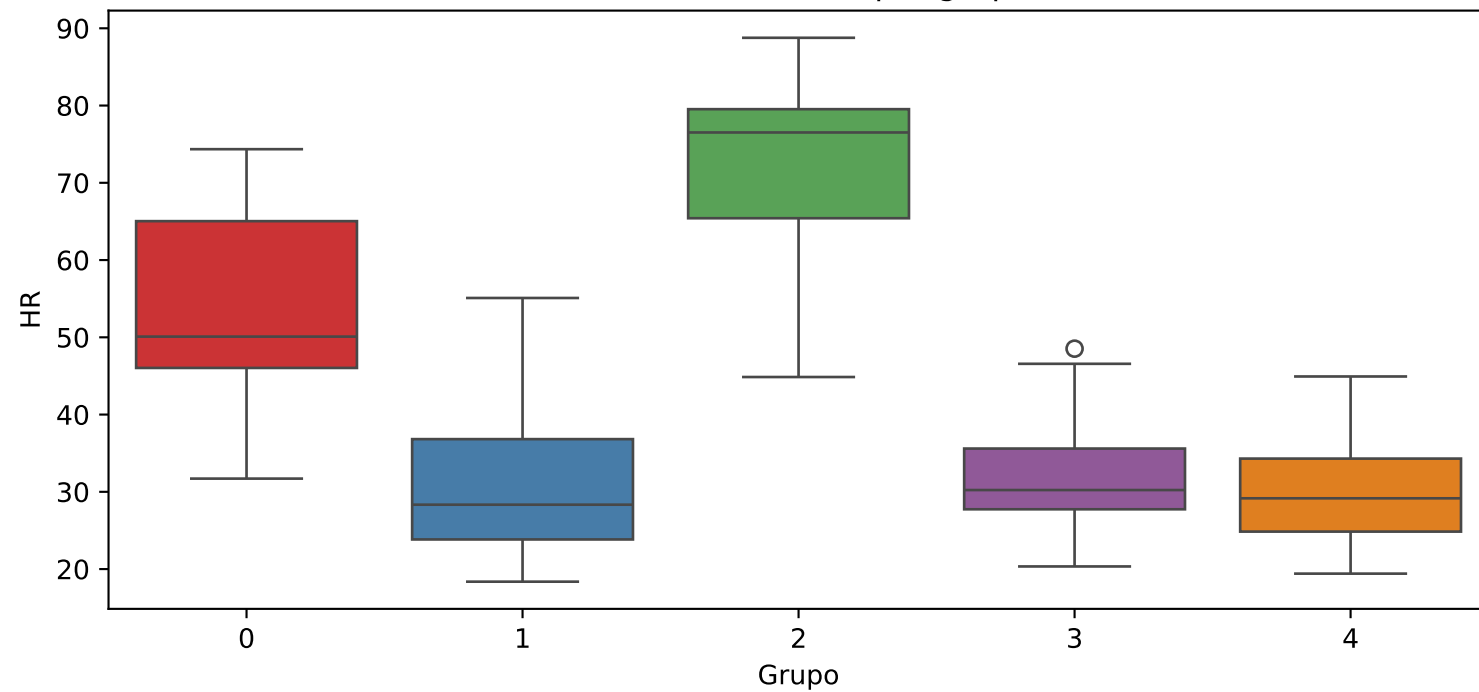
Distribución de Tmax por grupo



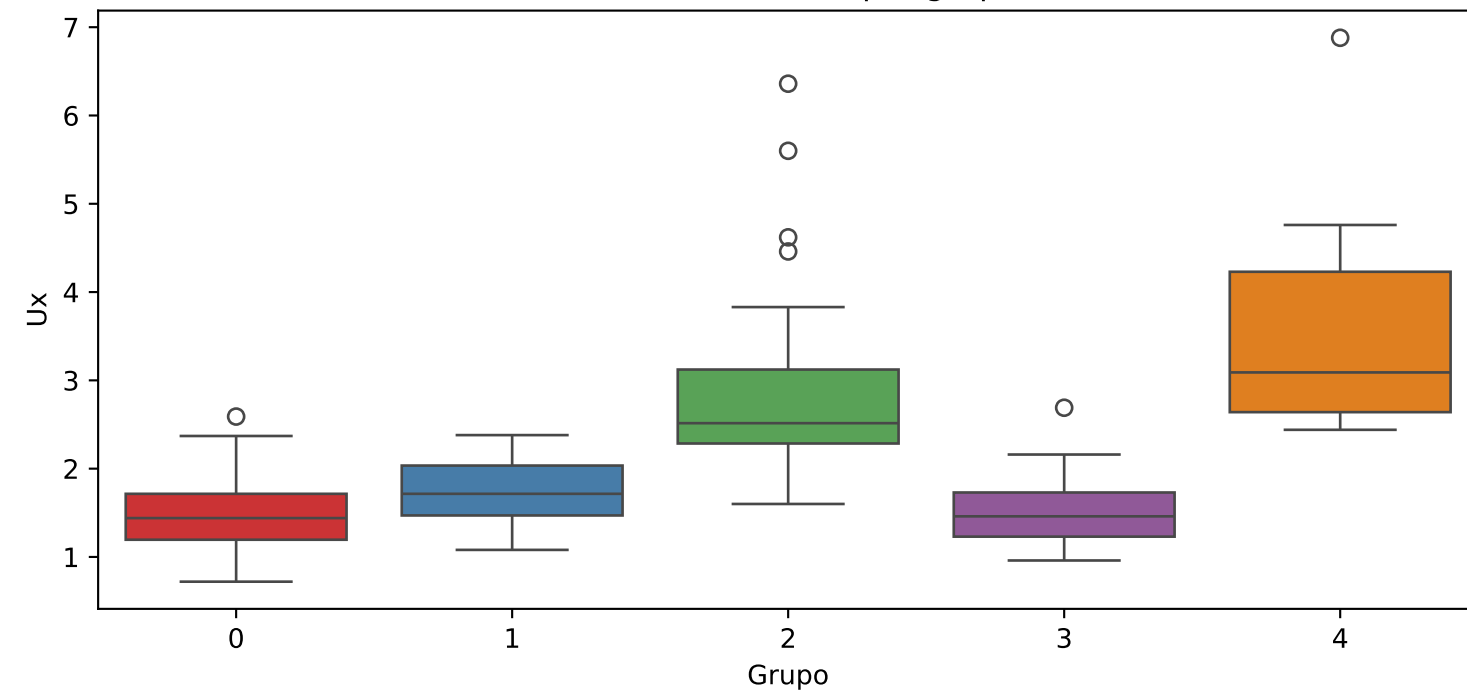
Distribución de Tmin por grupo



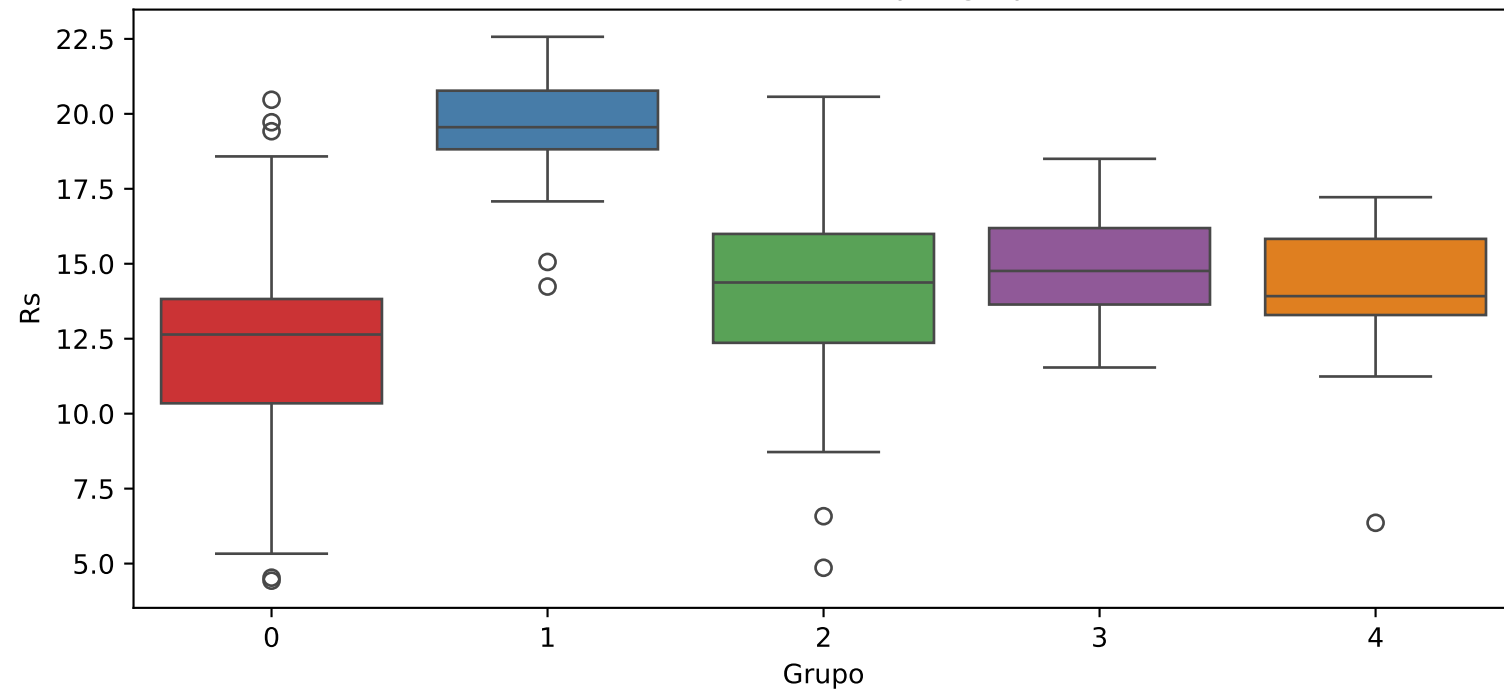
Distribución de HR por grupo



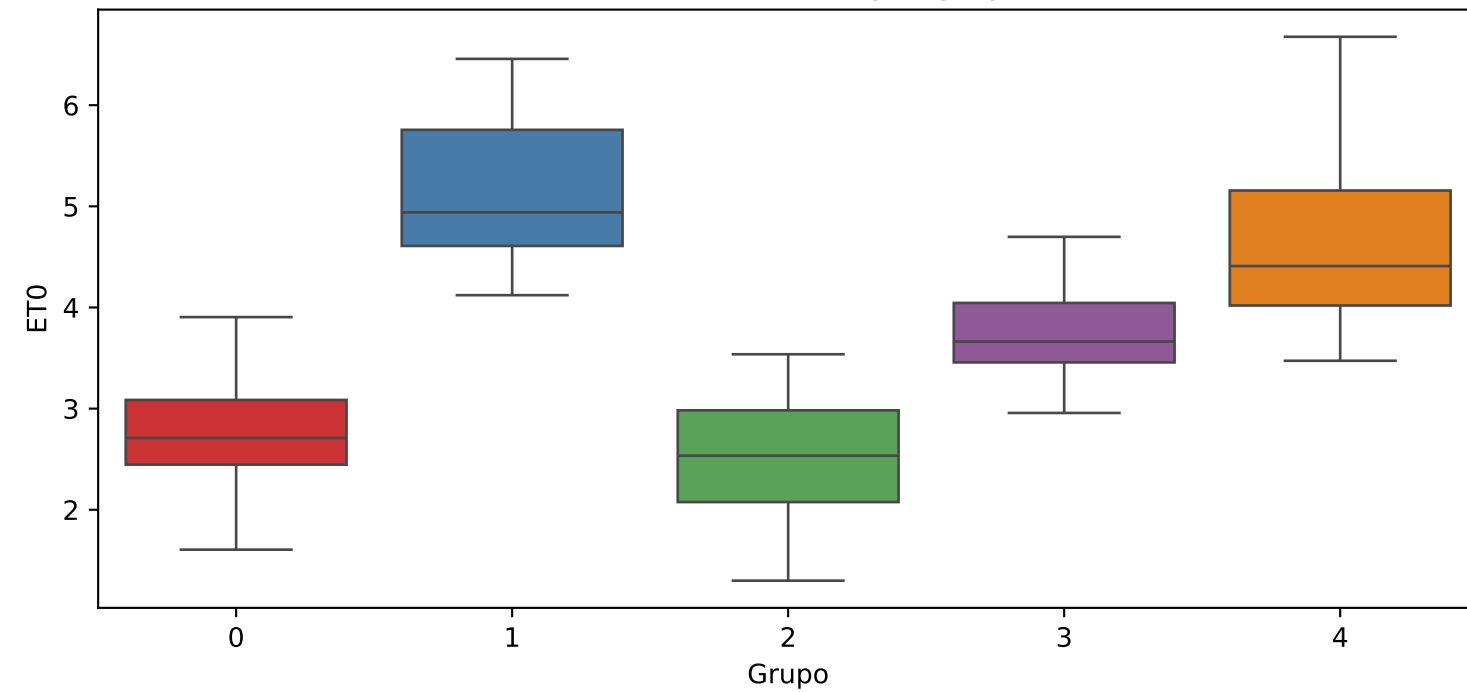
Distribución de Ux por grupo



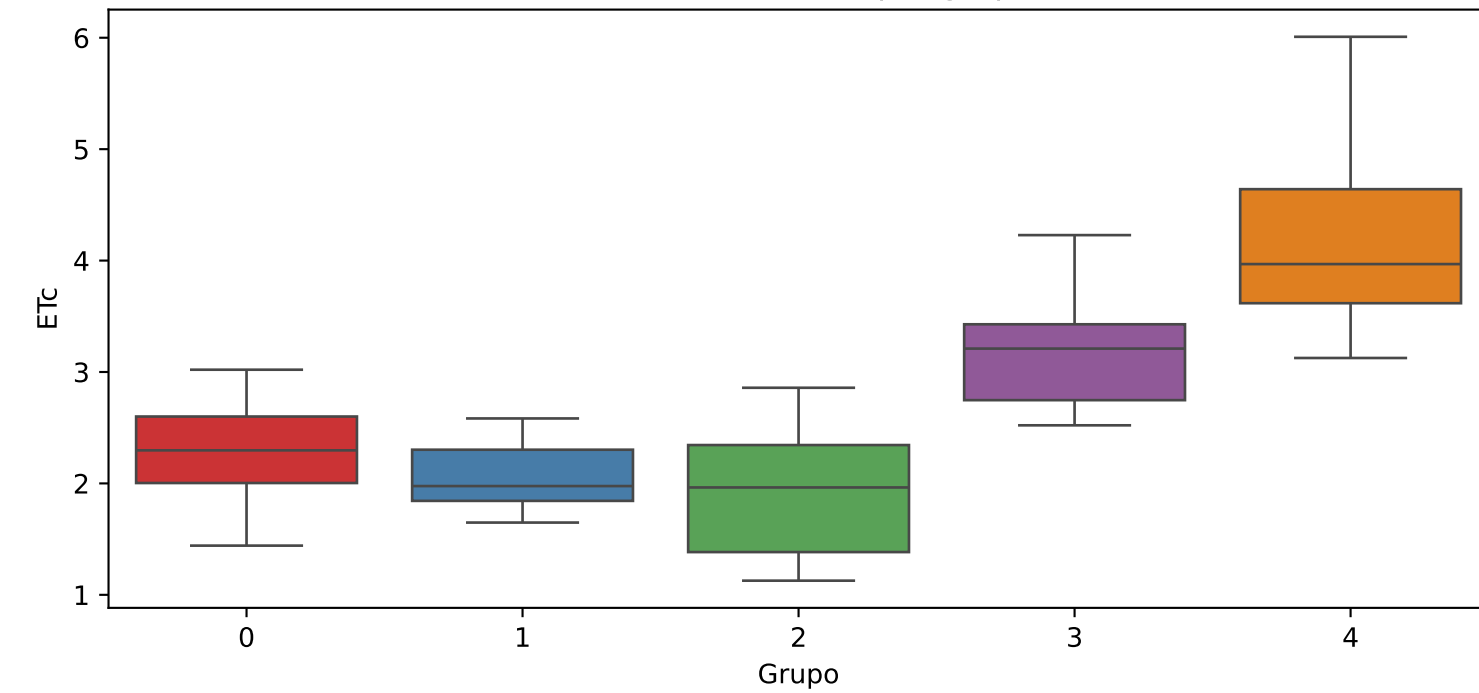
Distribución de Rs por grupo



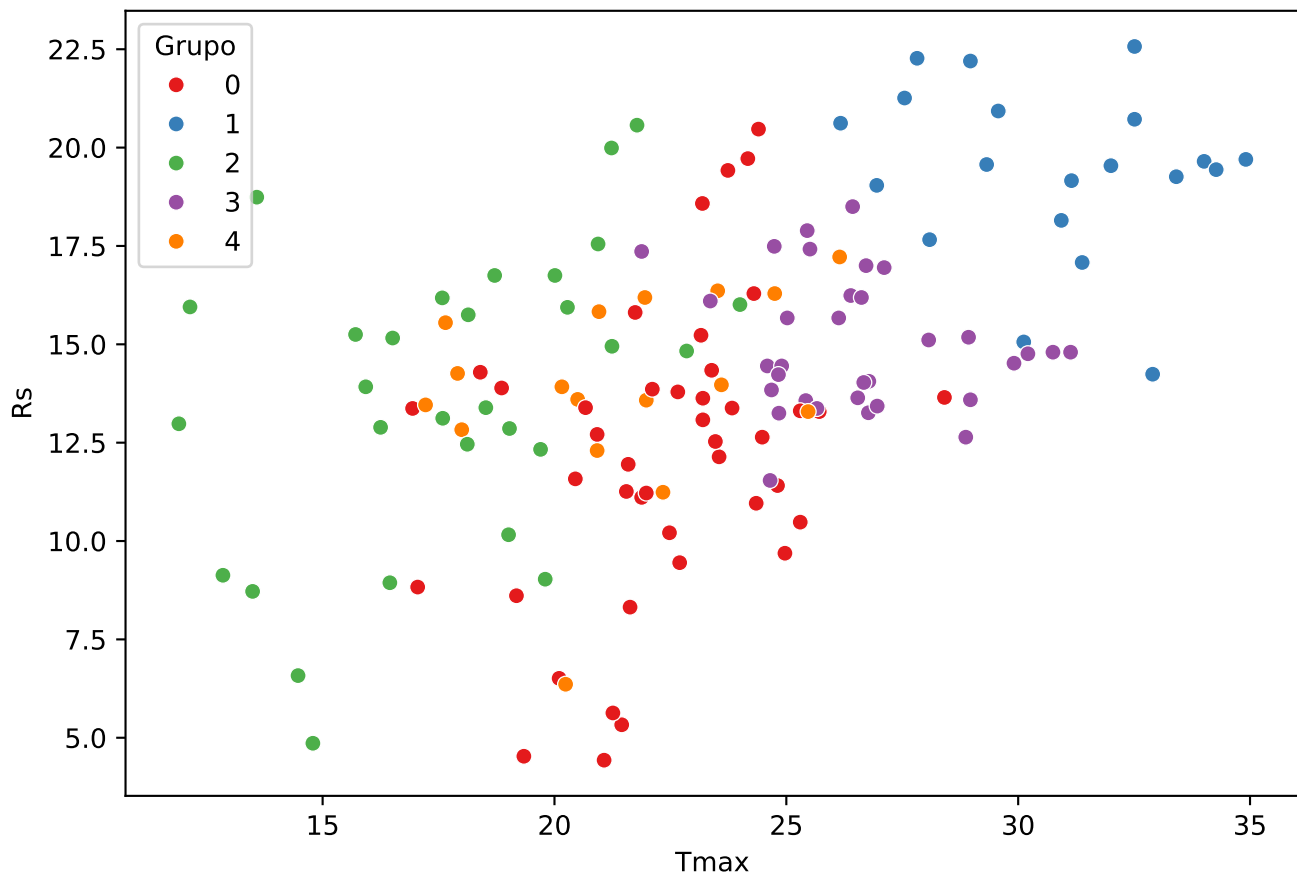
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2017-2018)



Ensenada — 2018-2019

Días del ciclo: 143

ETc total [mm]: 298.6

ETverde total [mm]: 36.0

ETazul total [mm]: 262.6

Tmax / Tmin [°C]: 31.1 / 0.5

Ensenada — 2018-2019 · Resultados y métricas

[Ensenada 2018-2019] Regresión Lineal ET0 — R^2 : 0.9492 MSE: 0.0516

[Ensenada 2018-2019] Random Forest ET0 — R^2 : 0.9495 MSE: 0.0513

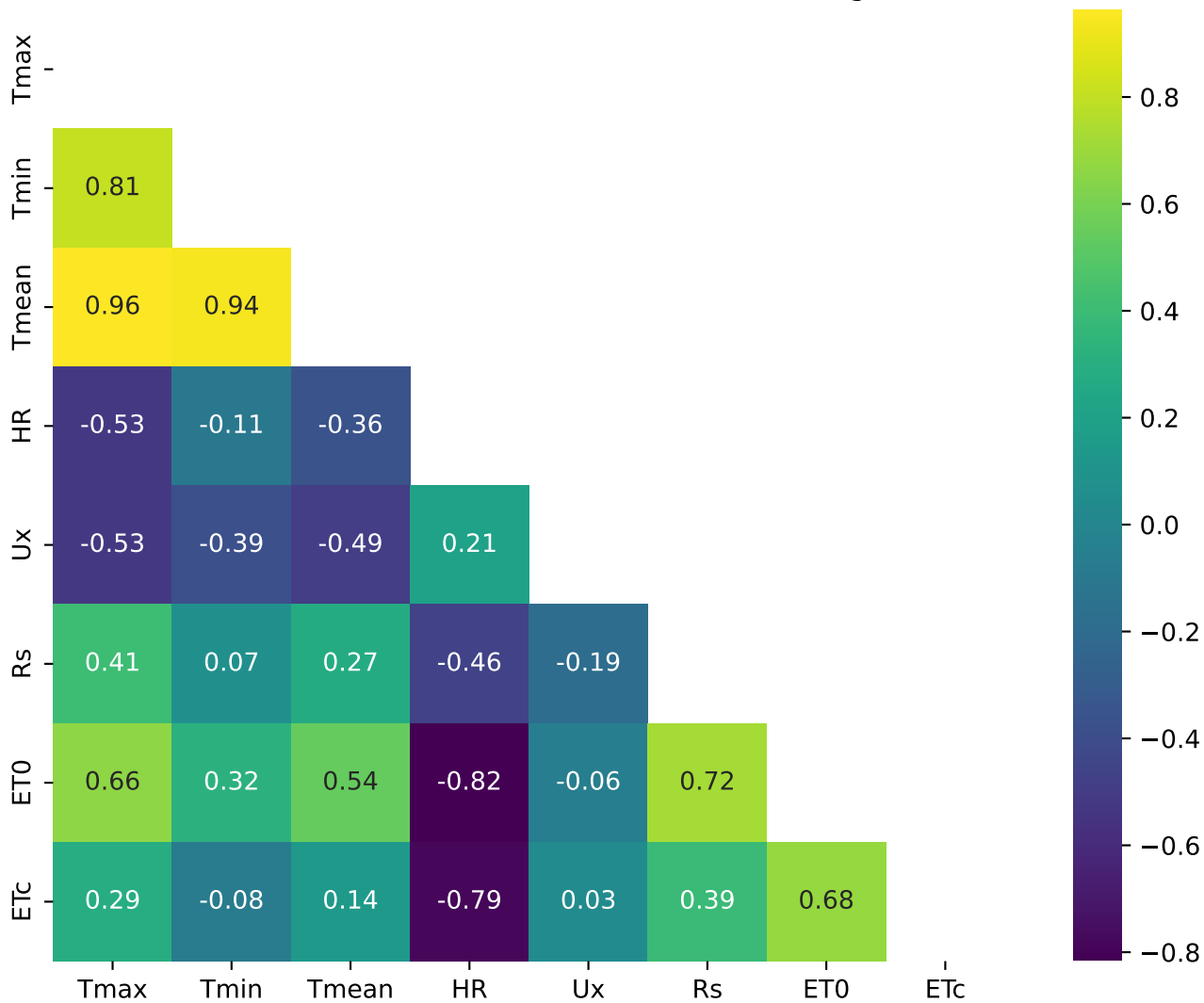
Importancias: {'Tmax': 0.20495788084407135, 'Tmin': 0.02627502465243593, 'HR': 0.5196691014740402, 'Ux': 0.05116506318484202, 'Rs': 0.19793292984461044}

Estadísticas descriptivas por grupo (medias):

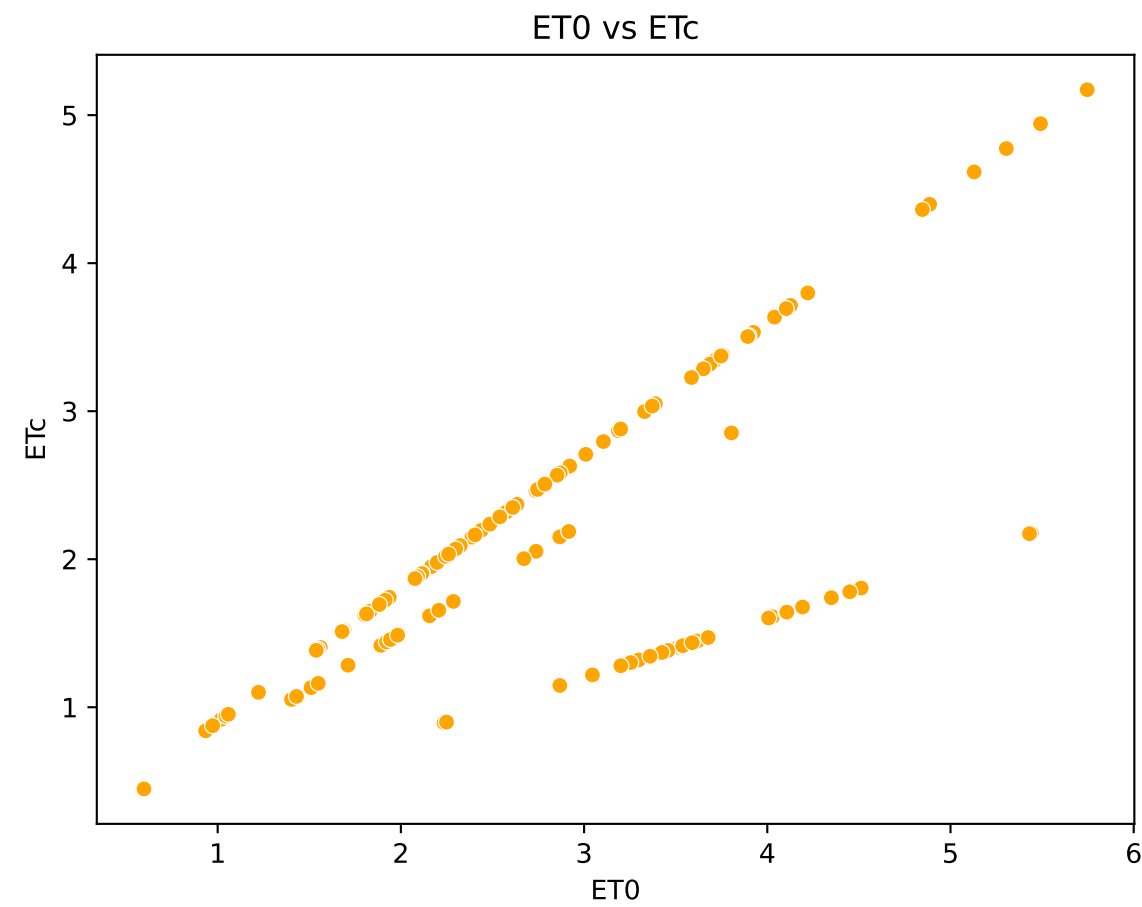
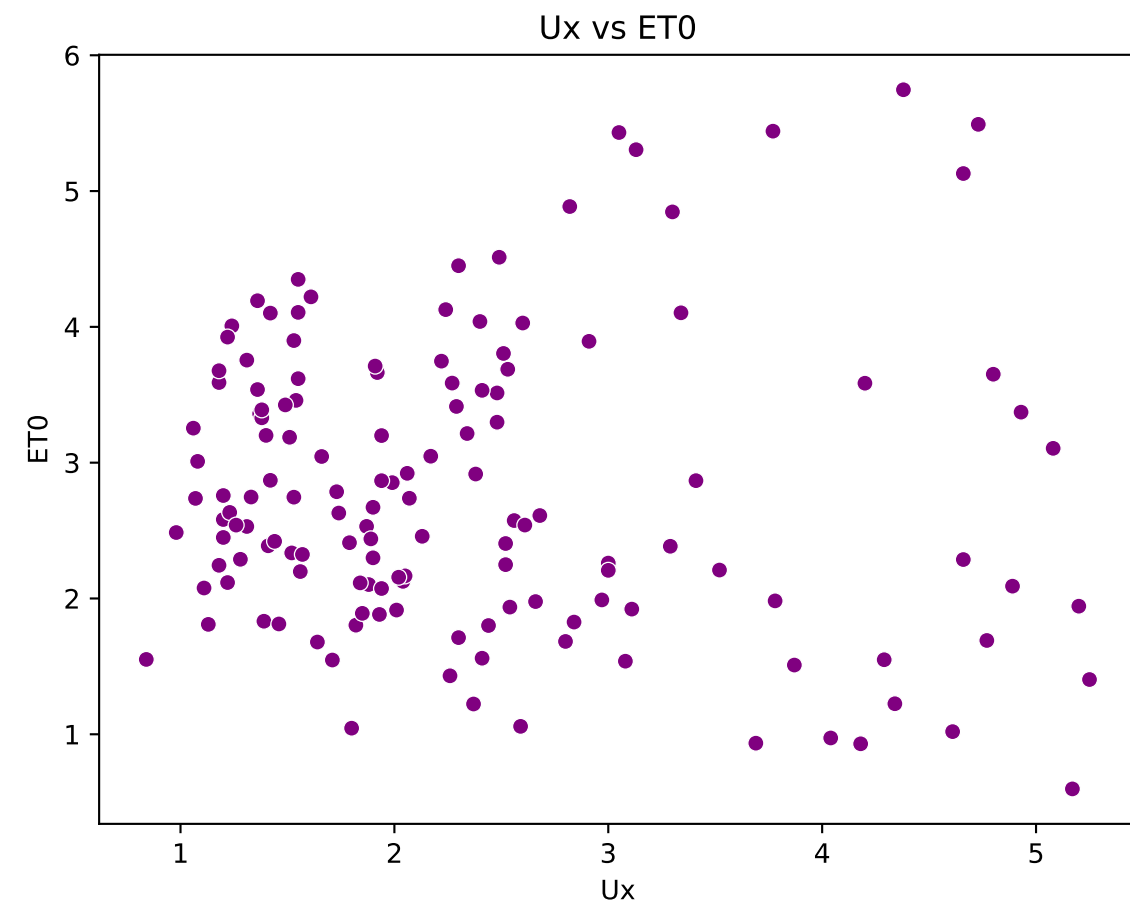
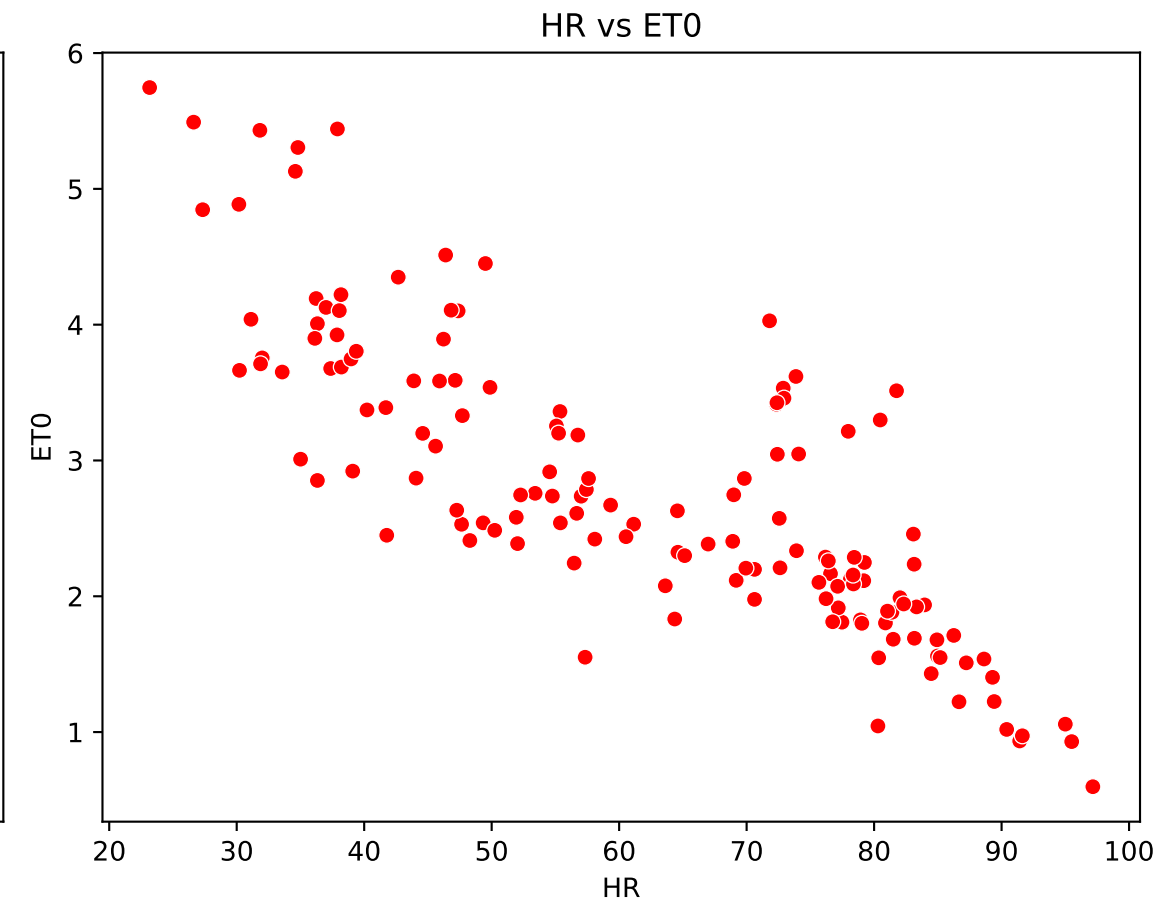
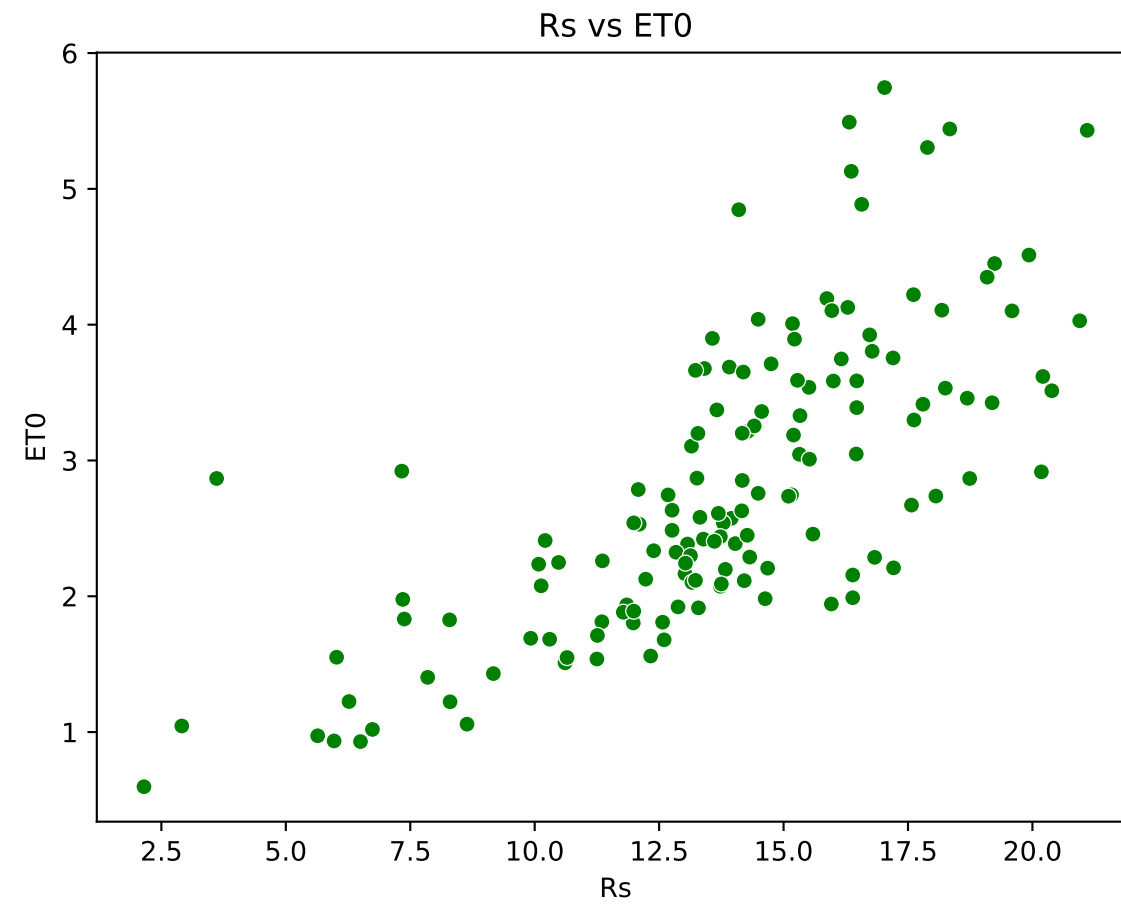
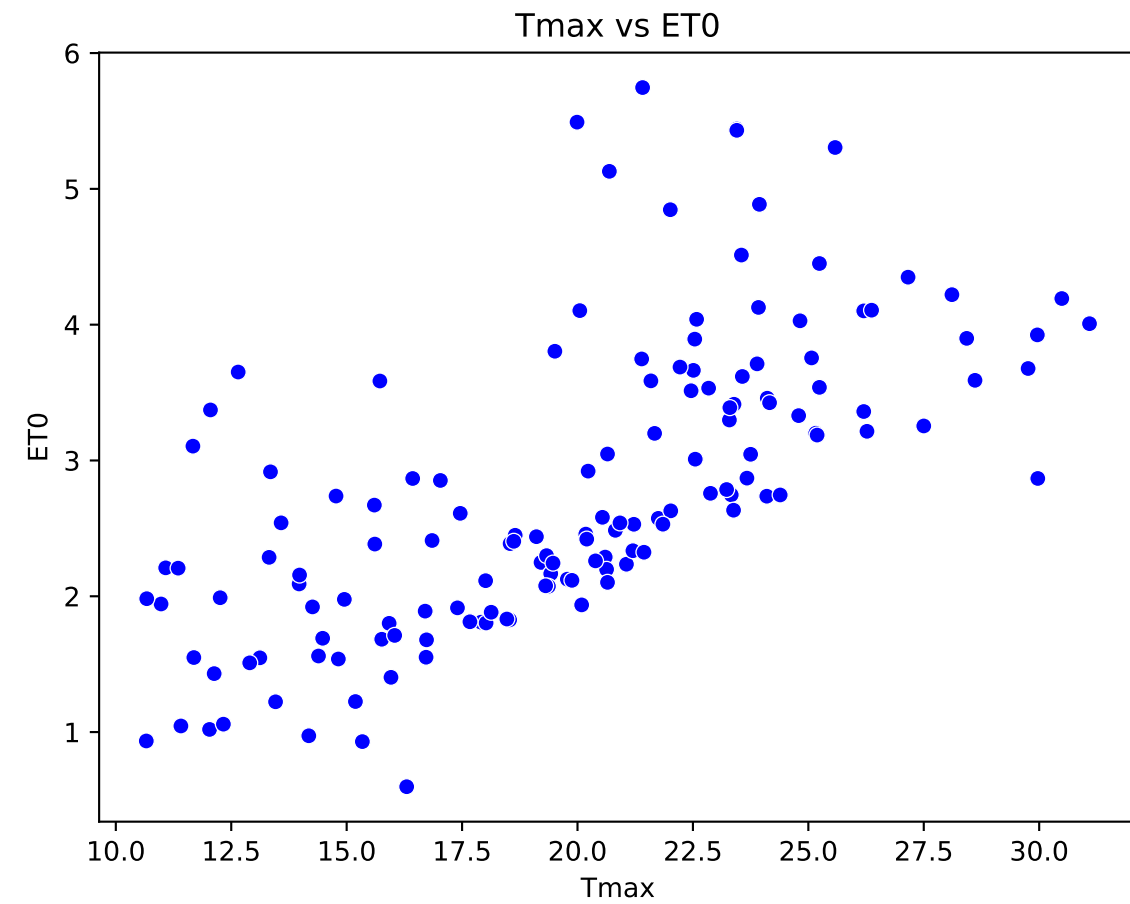
| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 14.644800 | 8.561200 | 85.713200 | 3.284000 | 8.725600 | 1.465591 | 1.156725 |
| 1 | 25.655385 | 14.311154 | 59.802308 | 1.822692 | 16.630385 | 3.615119 | 1.507339 |
| 2 | 23.317200 | 10.380000 | 35.597600 | 2.544000 | 16.136400 | 4.246772 | 3.581825 |
| 3 | 13.676500 | 3.704500 | 60.958000 | 3.395500 | 15.605500 | 2.608015 | 2.152460 |
| 4 | 20.116383 | 9.491702 | 64.862128 | 1.649149 | 12.611277 | 2.320841 | 2.082724 |

Ensenada — 2018-2019

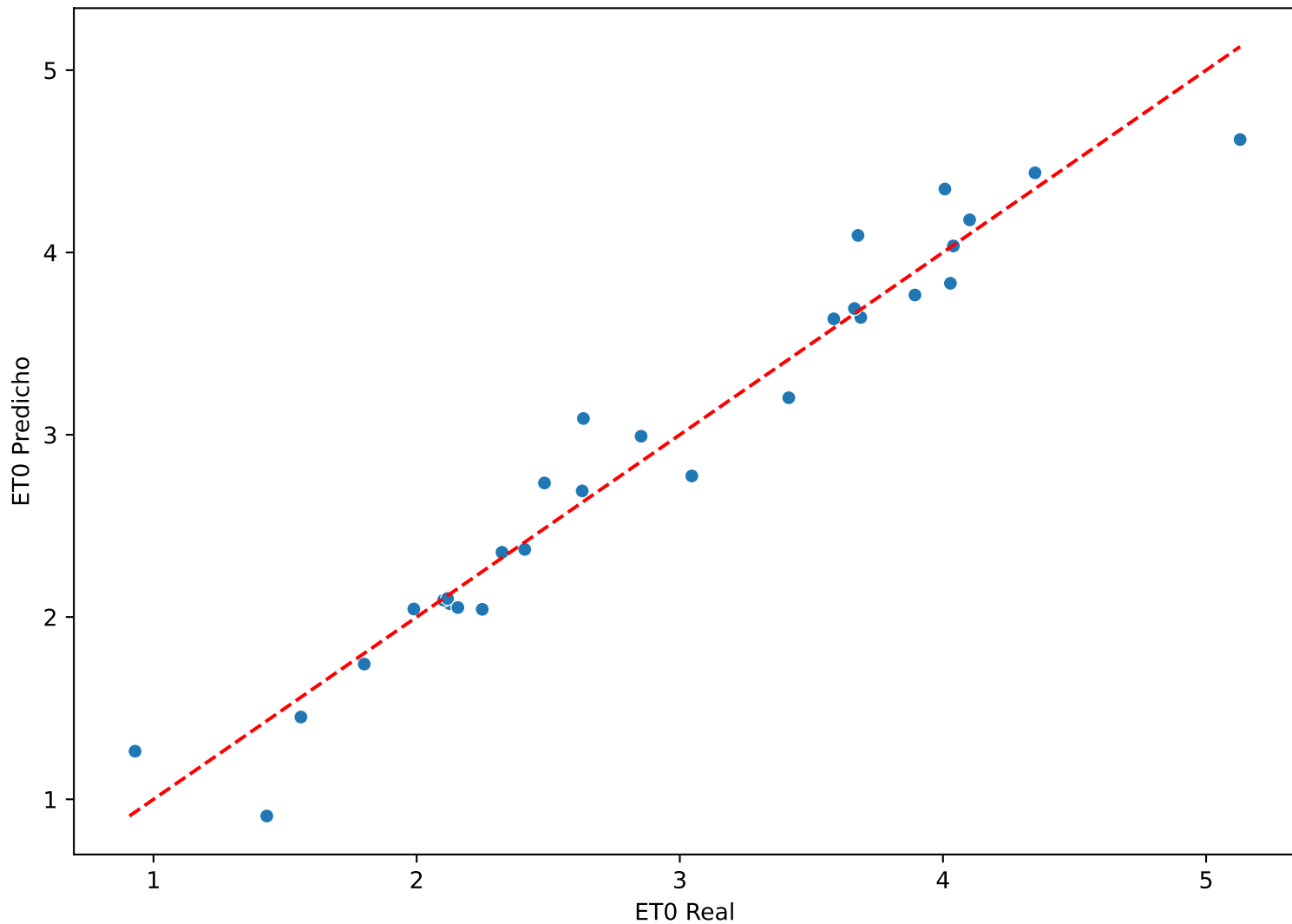
Matriz de Correlación entre Variables Meteorológicas



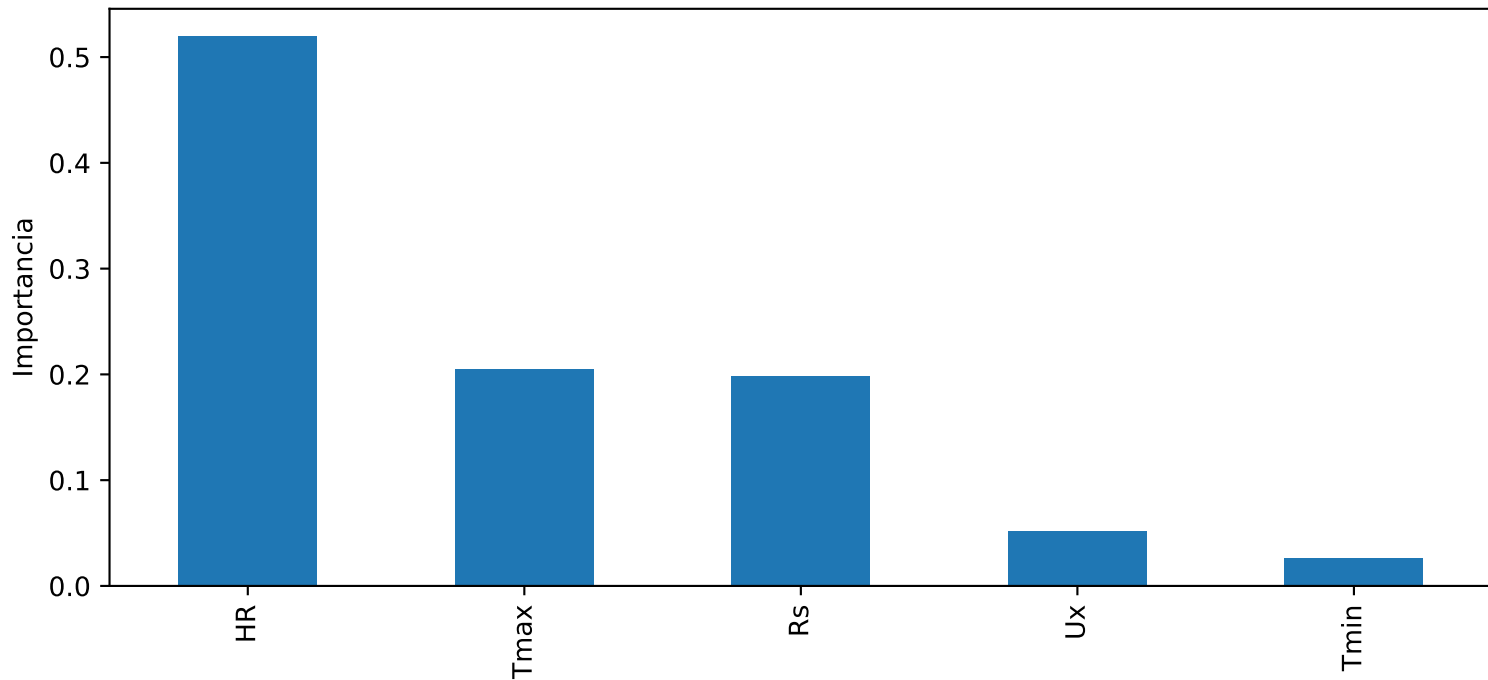
Dispersión — Ensenada (2018-2019)



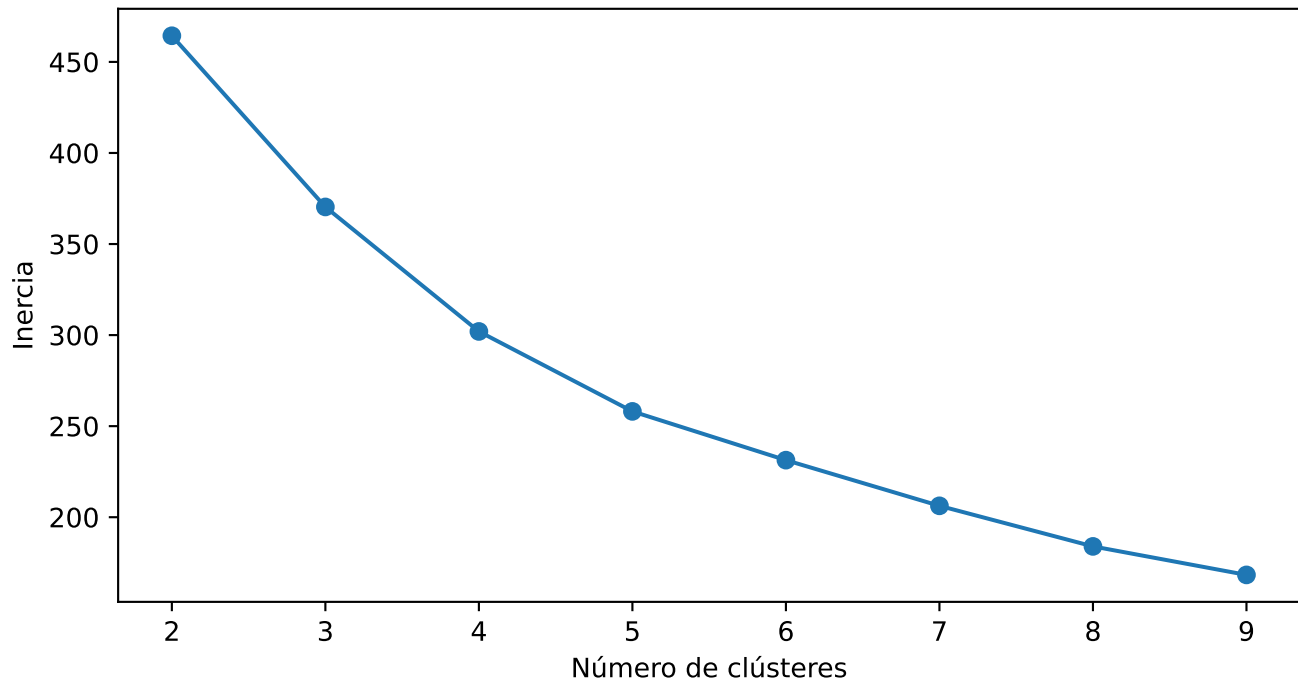
Comparación entre ET0 Real y Predicho — Ensenada (2018-2019)



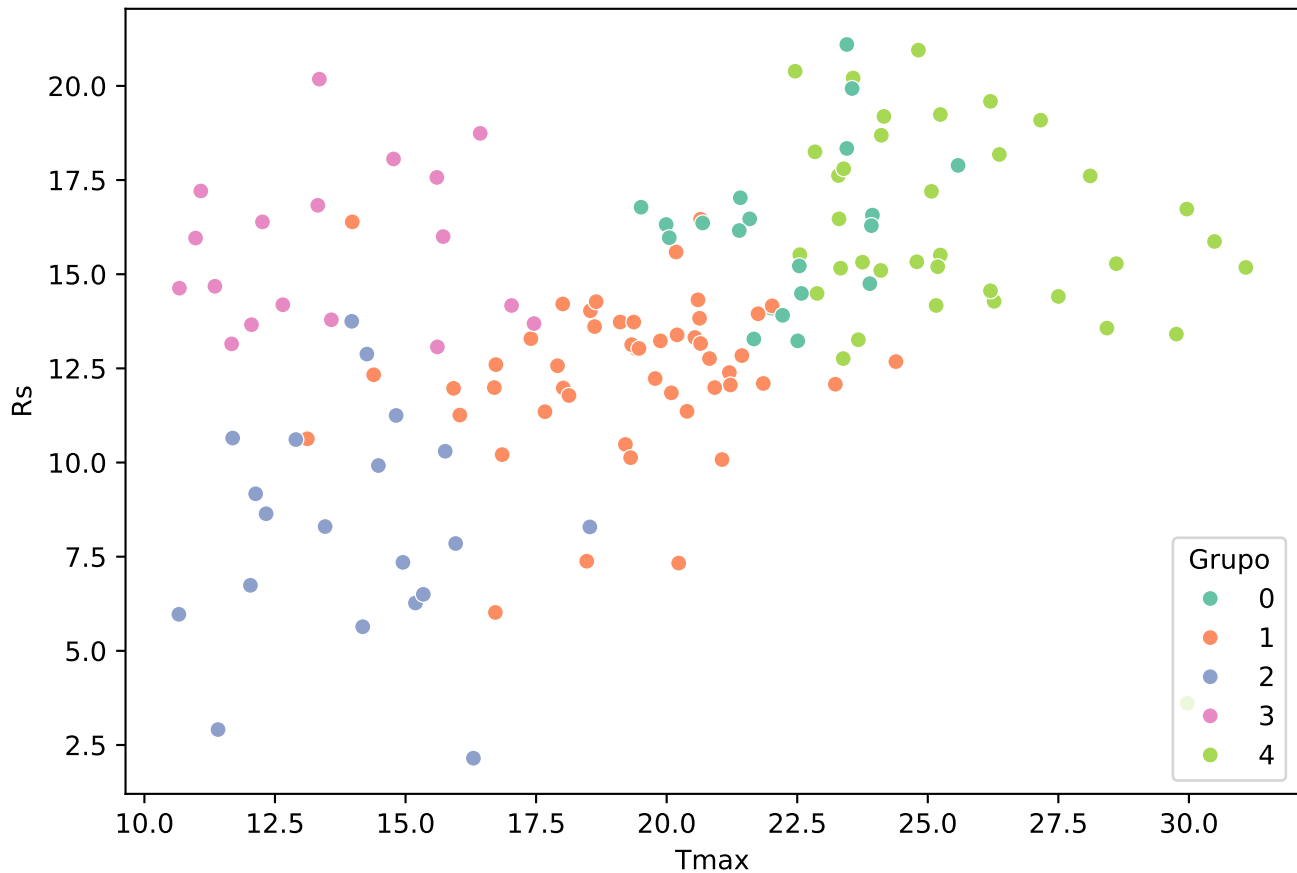
Importancia de variables (RF) — Ensenada (2018-2019)



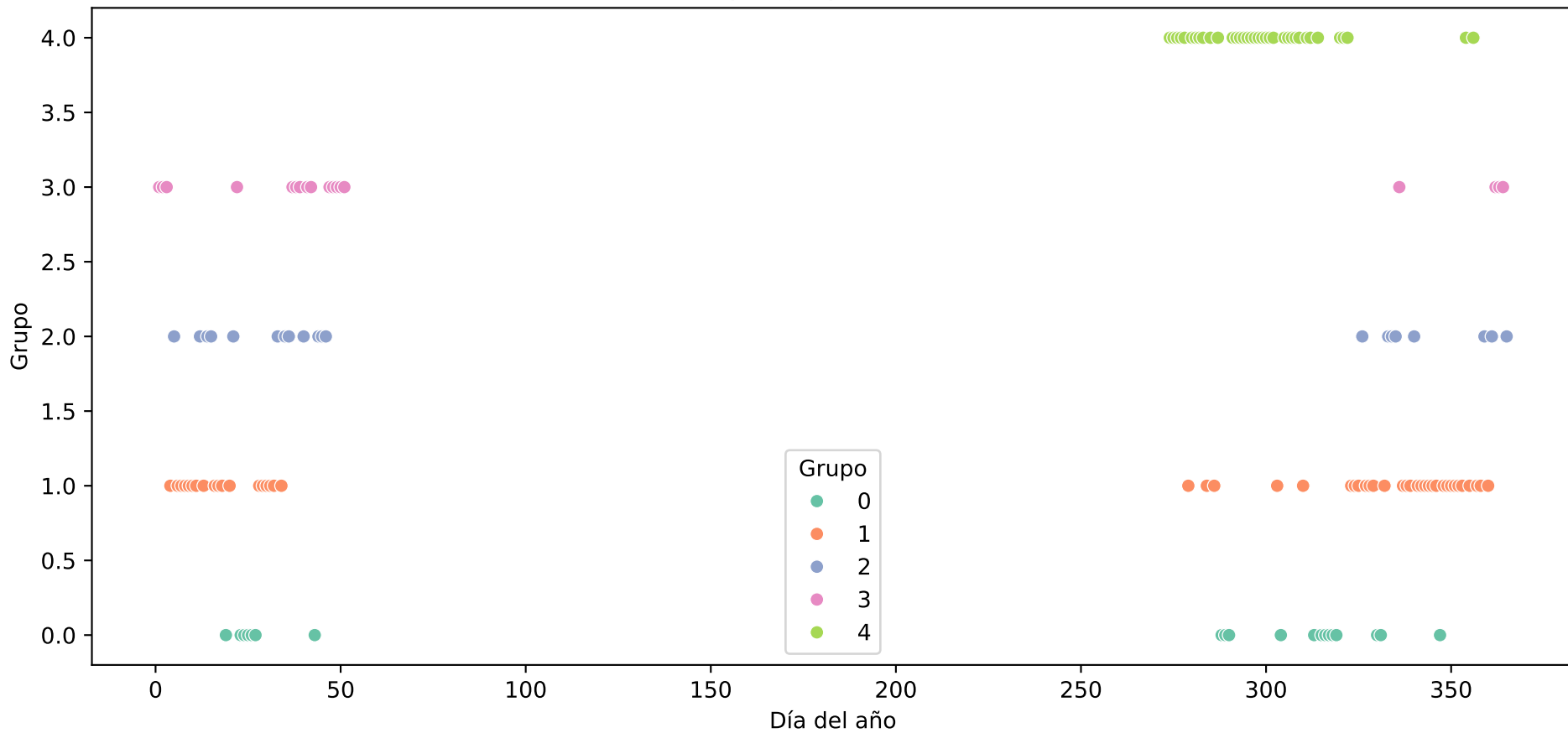
Método del codo



Clasificación de días climáticos — Ensenada (2018-2019)

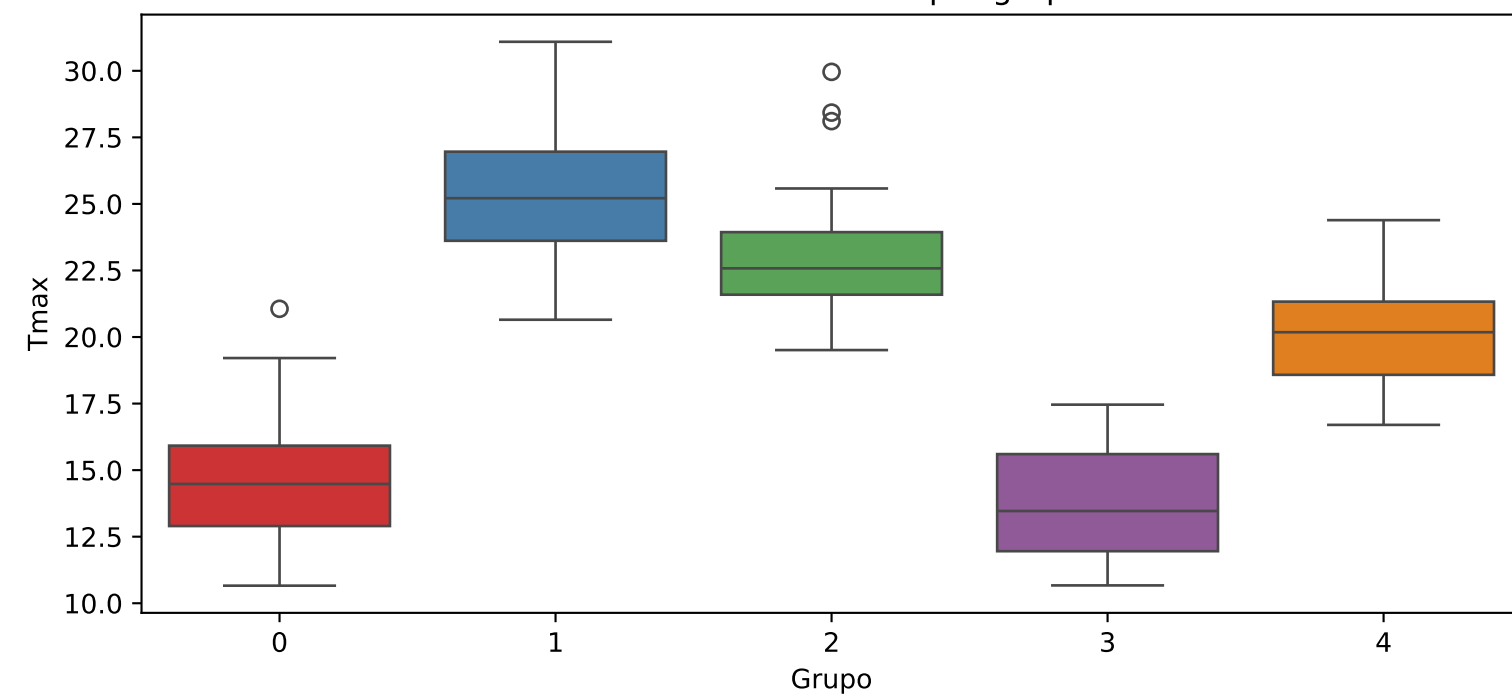


Distribución de días por grupo — Ensenada (2018-2019)

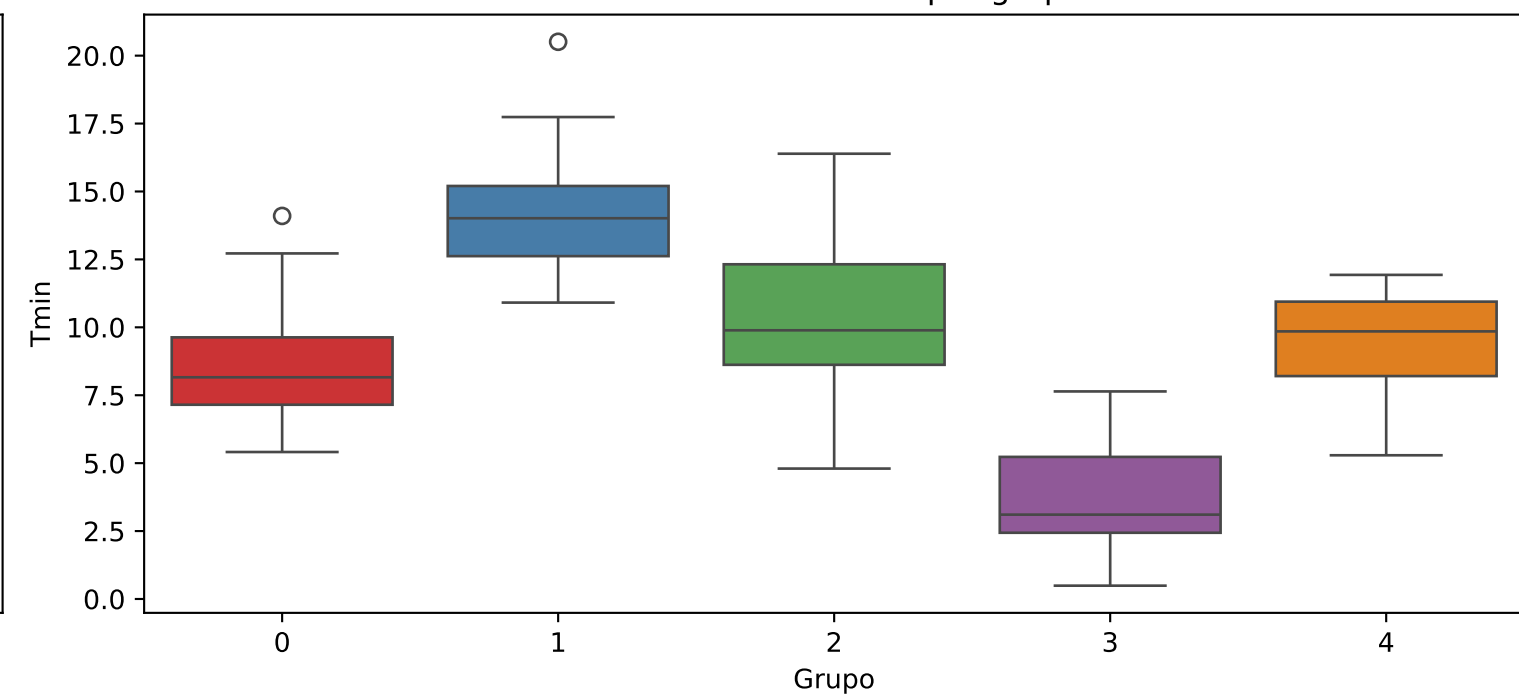


Boxplots por grupo — Ensenada (2018-2019)

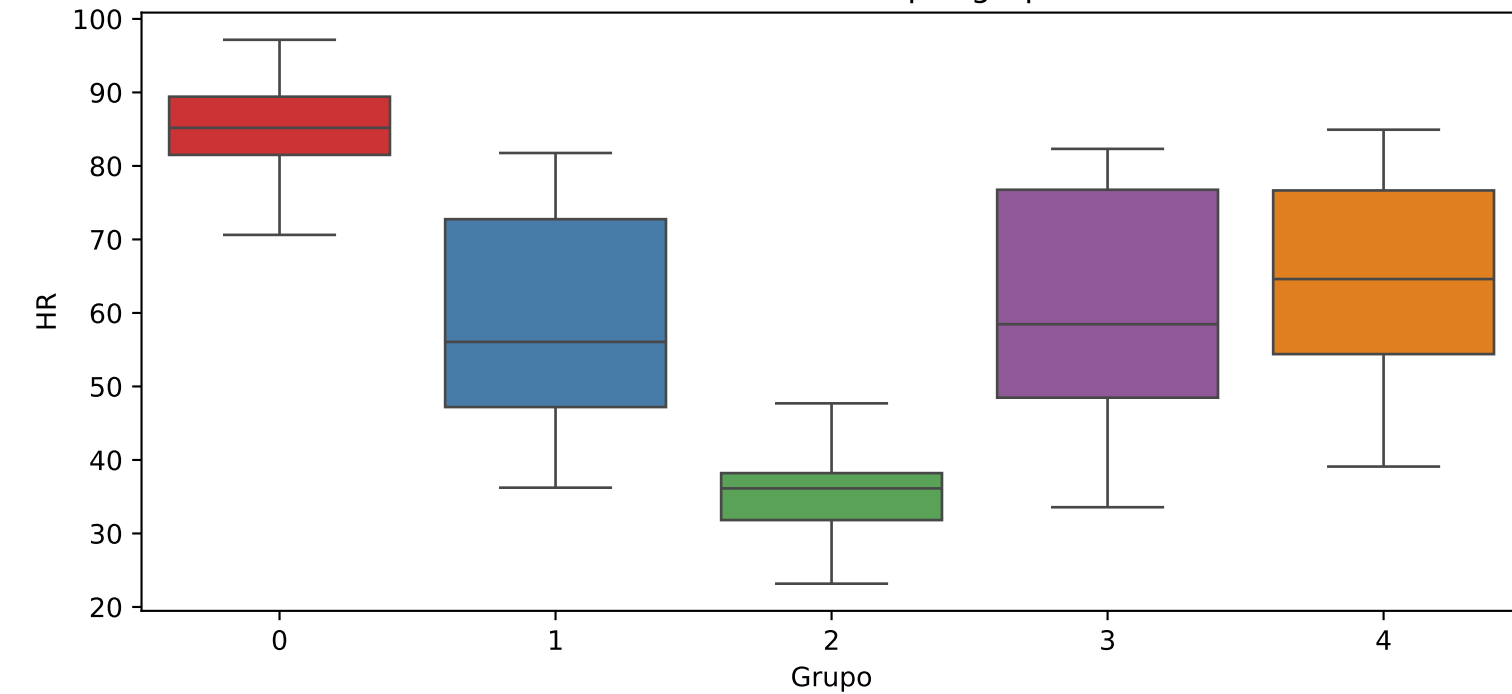
Distribución de Tmax por grupo



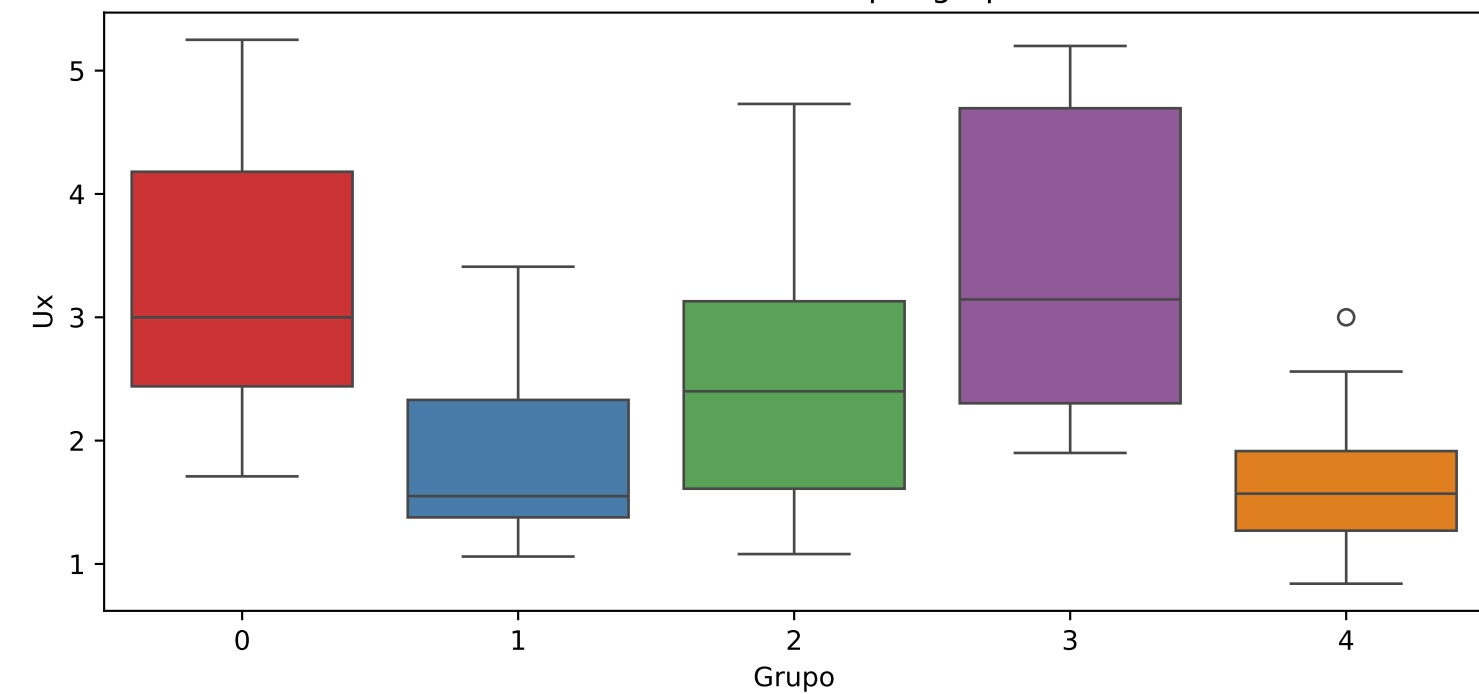
Distribución de Tmin por grupo



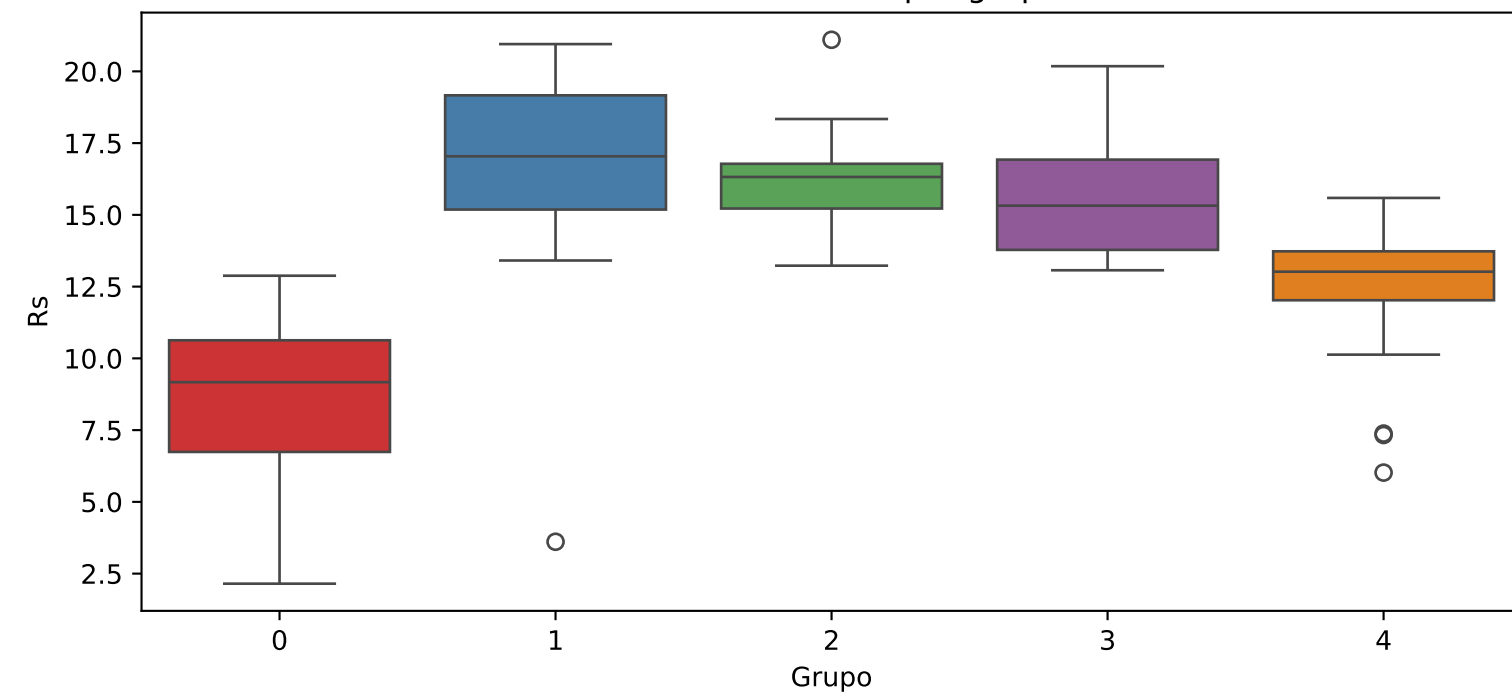
Distribución de HR por grupo



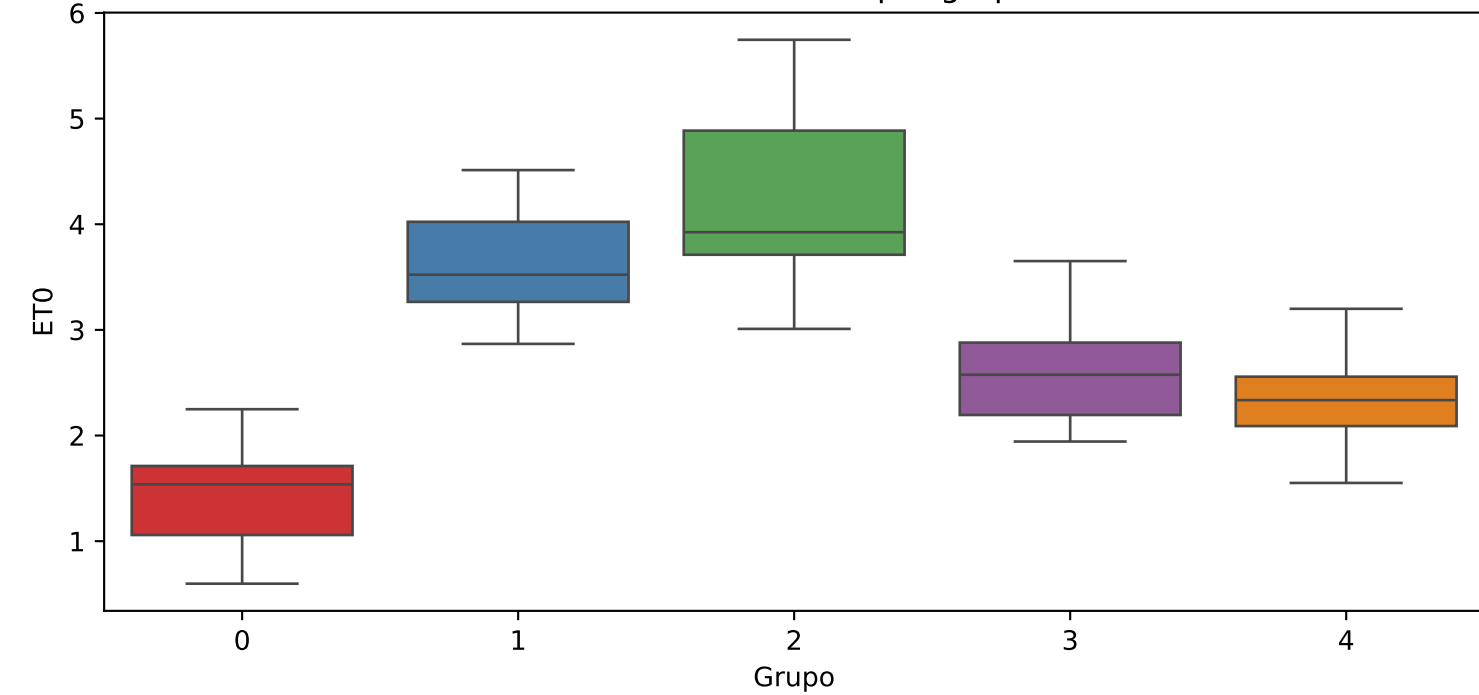
Distribución de Ux por grupo



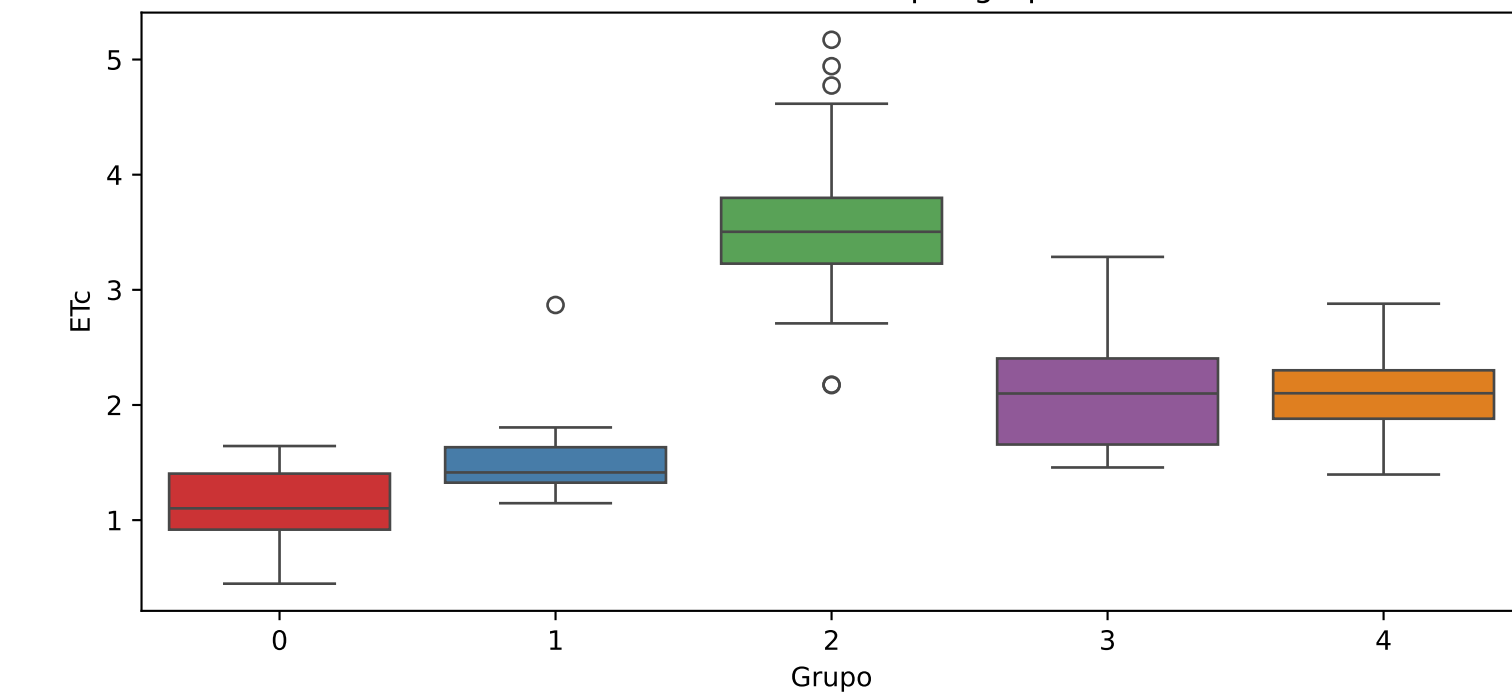
Distribución de Rs por grupo



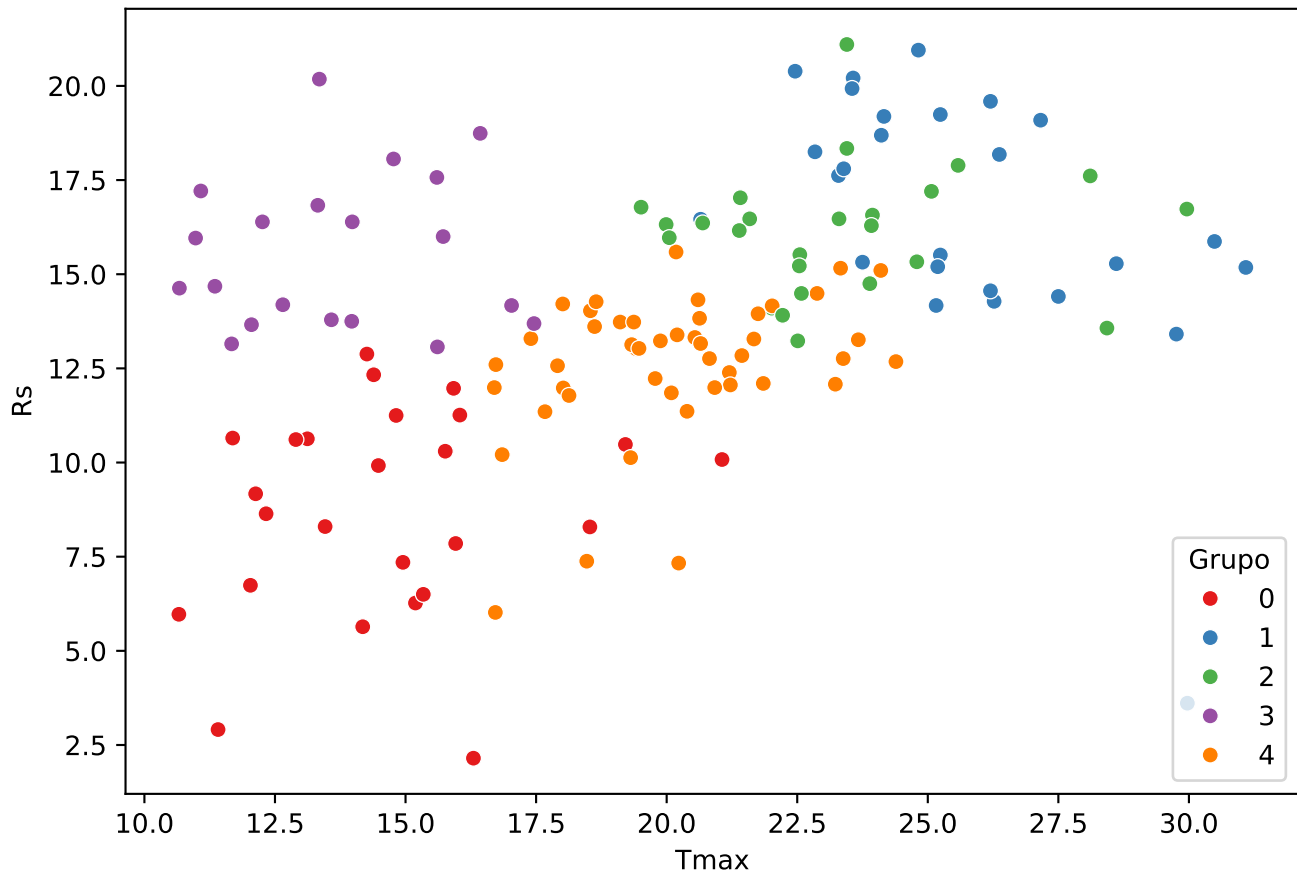
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2018-2019)



Ensenada — 2019-2020

Días del ciclo: 143

ETc total [mm]: 320.6

ETverde total [mm]: 23.2

ETazul total [mm]: 297.3

Tmax / Tmin [°C]: 32.1 / 0.8

Ensenada — 2019-2020 · Resultados y métricas

[Ensenada 2019-2020] Regresión Lineal ET0 — R^2 : 0.9821 MSE: 0.0277

[Ensenada 2019-2020] Random Forest ET0 — R^2 : 0.9410 MSE: 0.0909

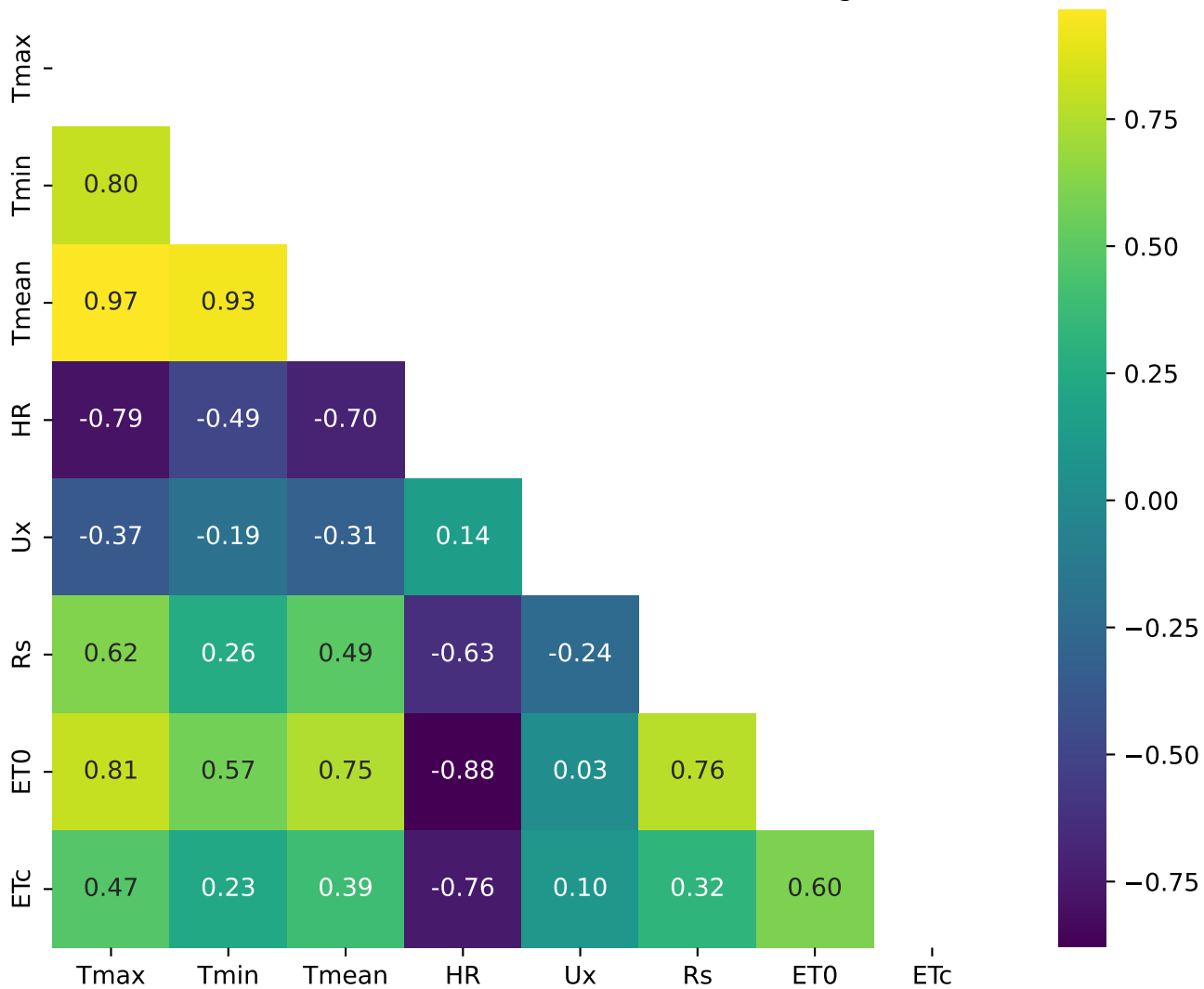
Importancias: {'Tmax': 0.16730858047064742, 'Tmin': 0.01614401536797082, 'HR': 0.654287285027983, 'Ux': 0.02776163392100116, 'Rs': 0.13449848521239763}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 14.924167 | 8.237778 | 80.276389 | 2.702222 | 9.562500 | 1.616997 | 1.391356 |
| 1 | 19.965965 | 7.586667 | 58.160526 | 1.816491 | 15.060526 | 2.803324 | 2.243614 |
| 2 | 28.122609 | 14.207391 | 37.340435 | 1.904348 | 20.258261 | 5.085642 | 2.034257 |
| 3 | 27.094444 | 14.598889 | 36.071667 | 1.480000 | 14.730000 | 3.740430 | 3.366387 |
| 4 | 19.484444 | 7.205556 | 35.851111 | 4.142222 | 16.385556 | 4.581884 | 3.910900 |

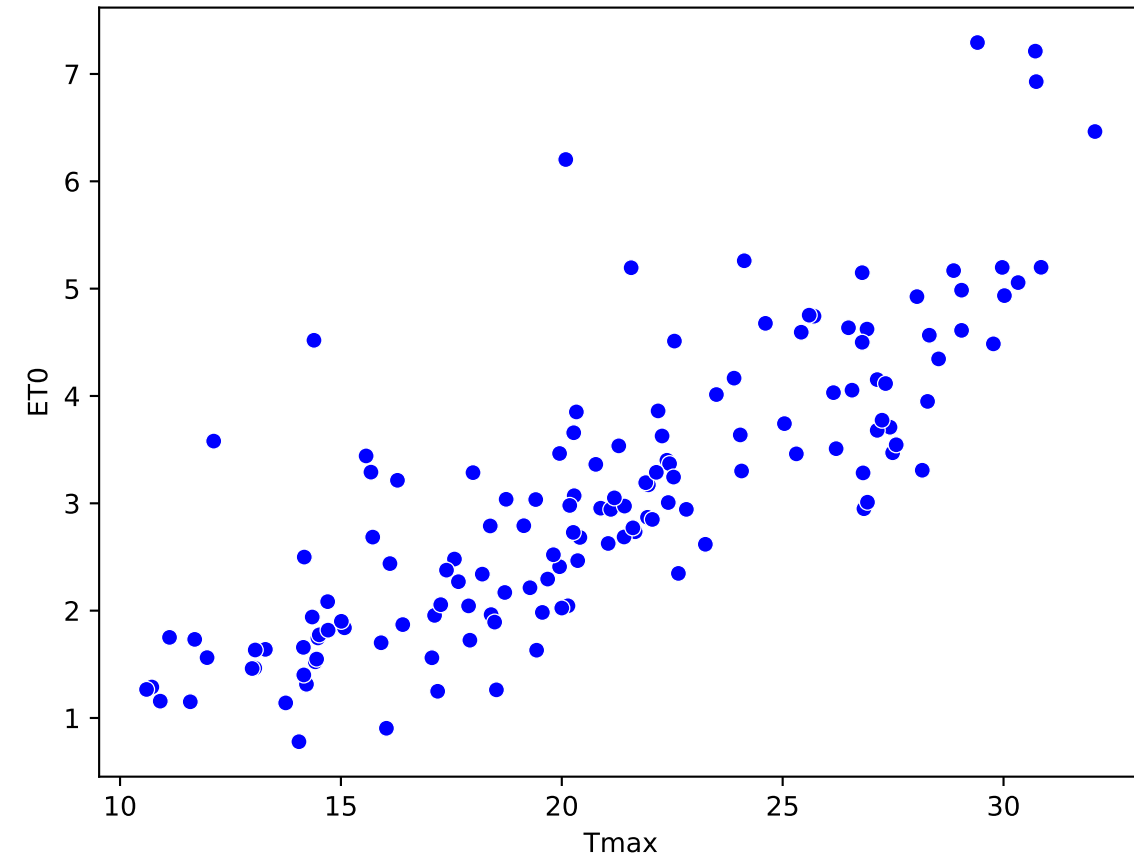
Ensenada — 2019-2020

Matriz de Correlación entre Variables Meteorológicas

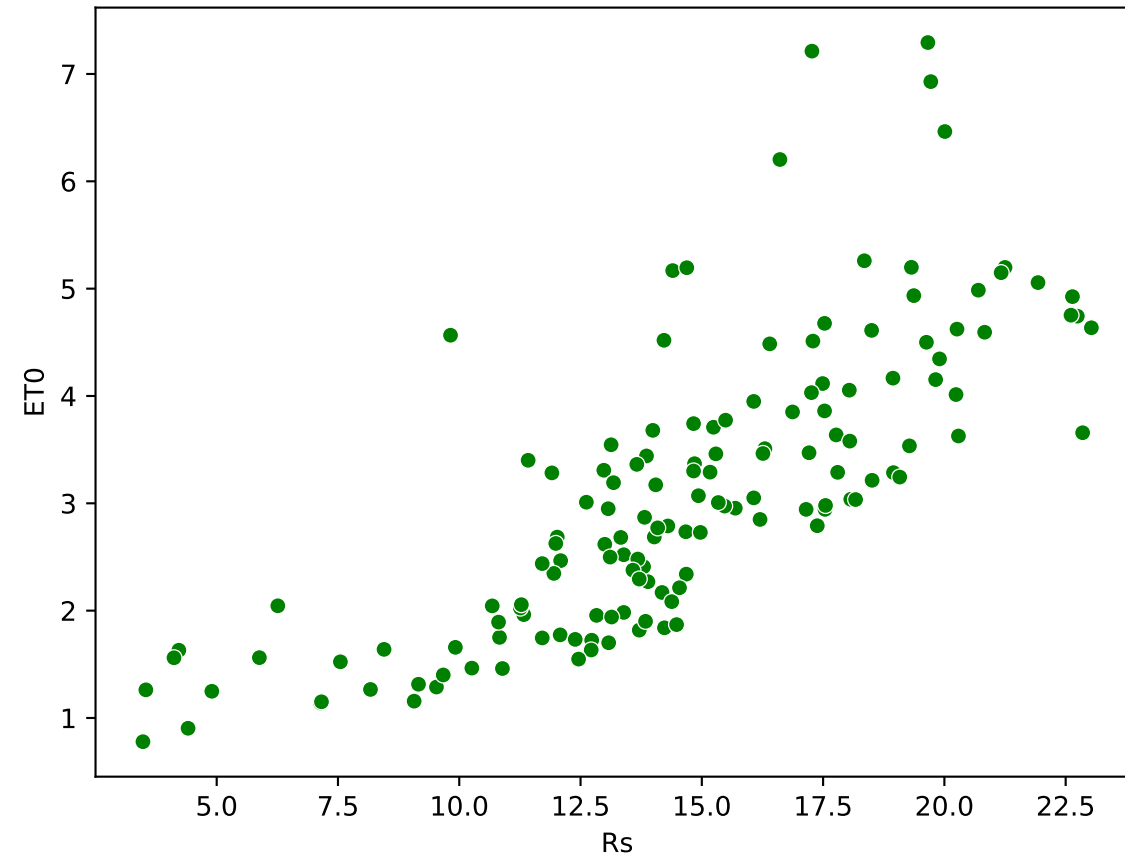


Dispersión — Ensenada (2019-2020)

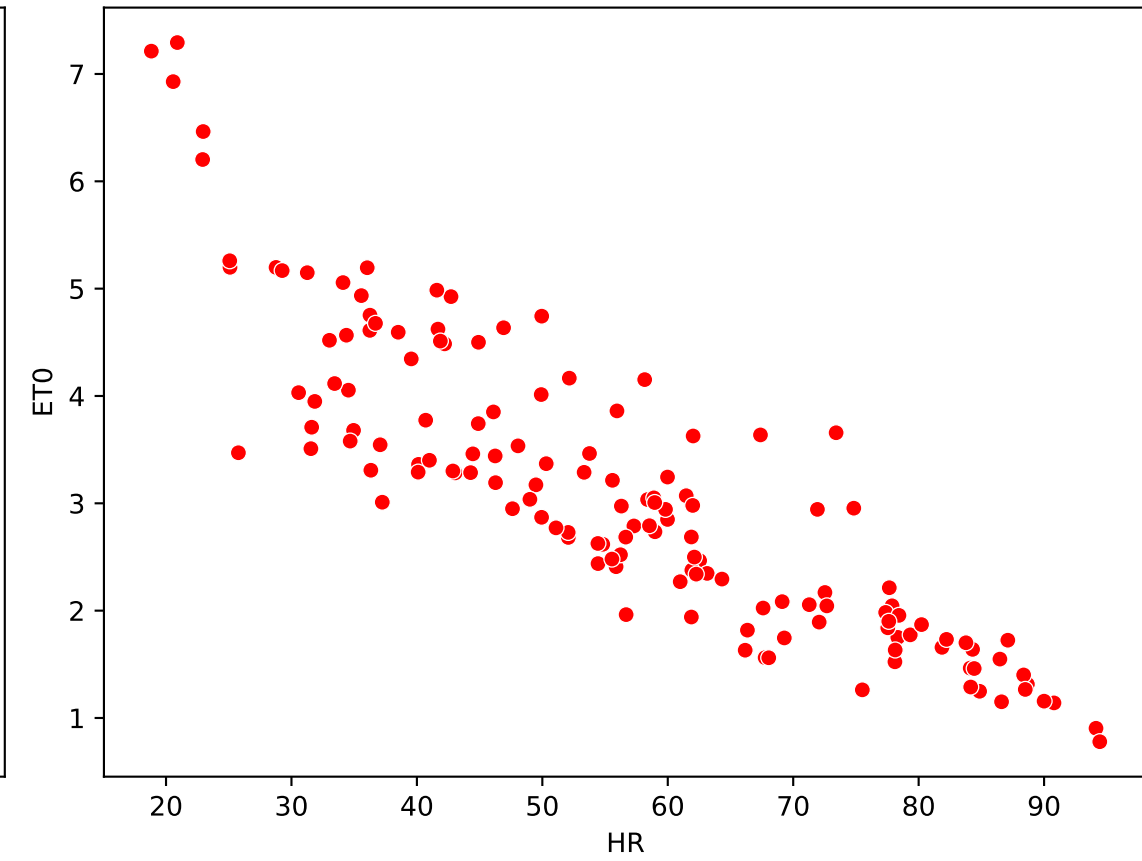
Tmax vs ET0



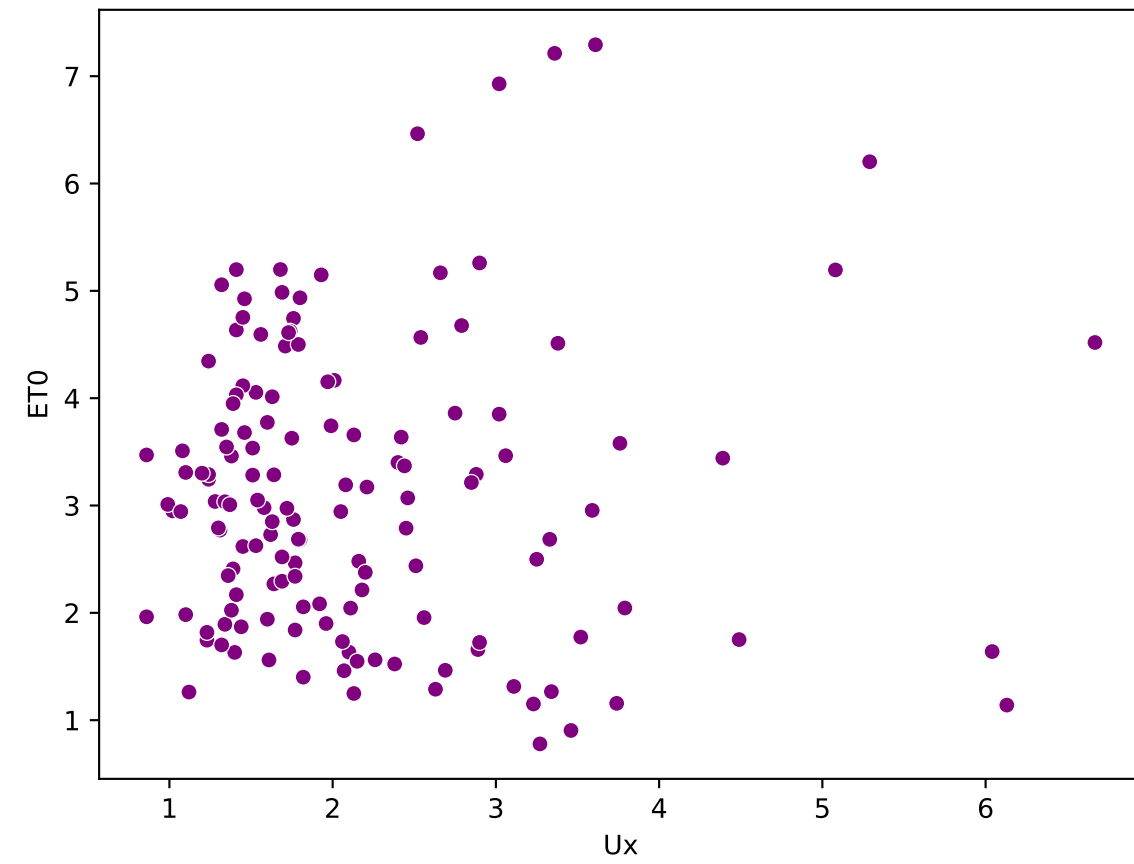
Rs vs ET0



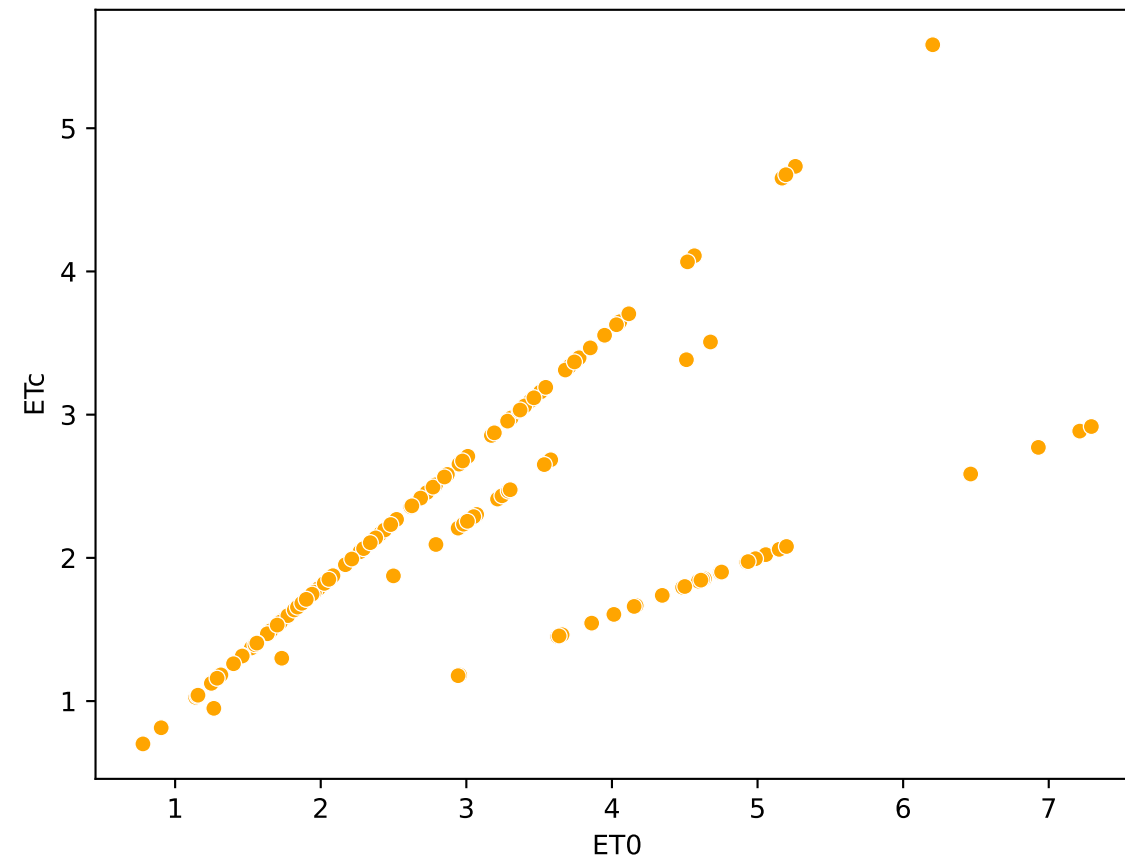
HR vs ET0



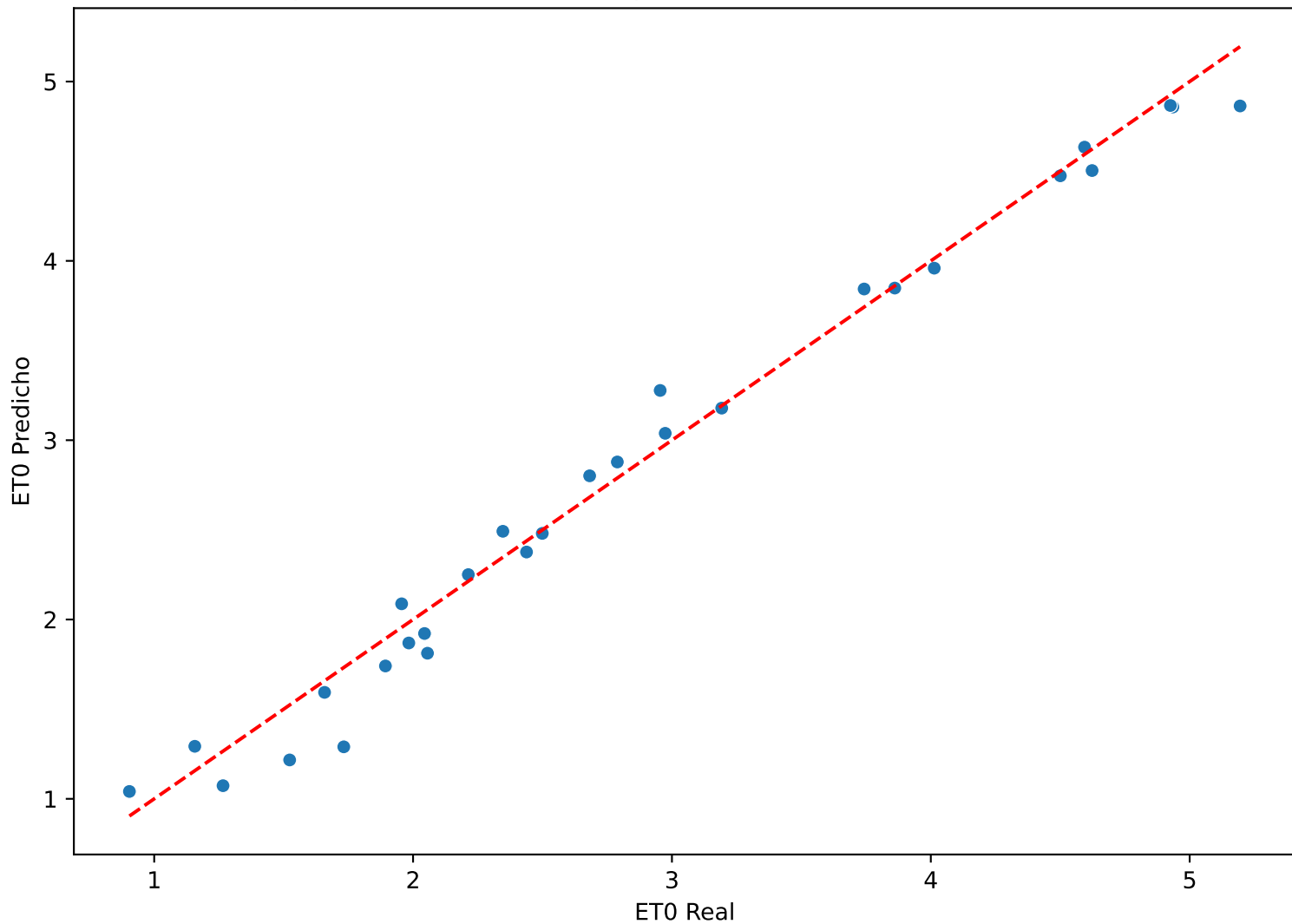
Ux vs ET0



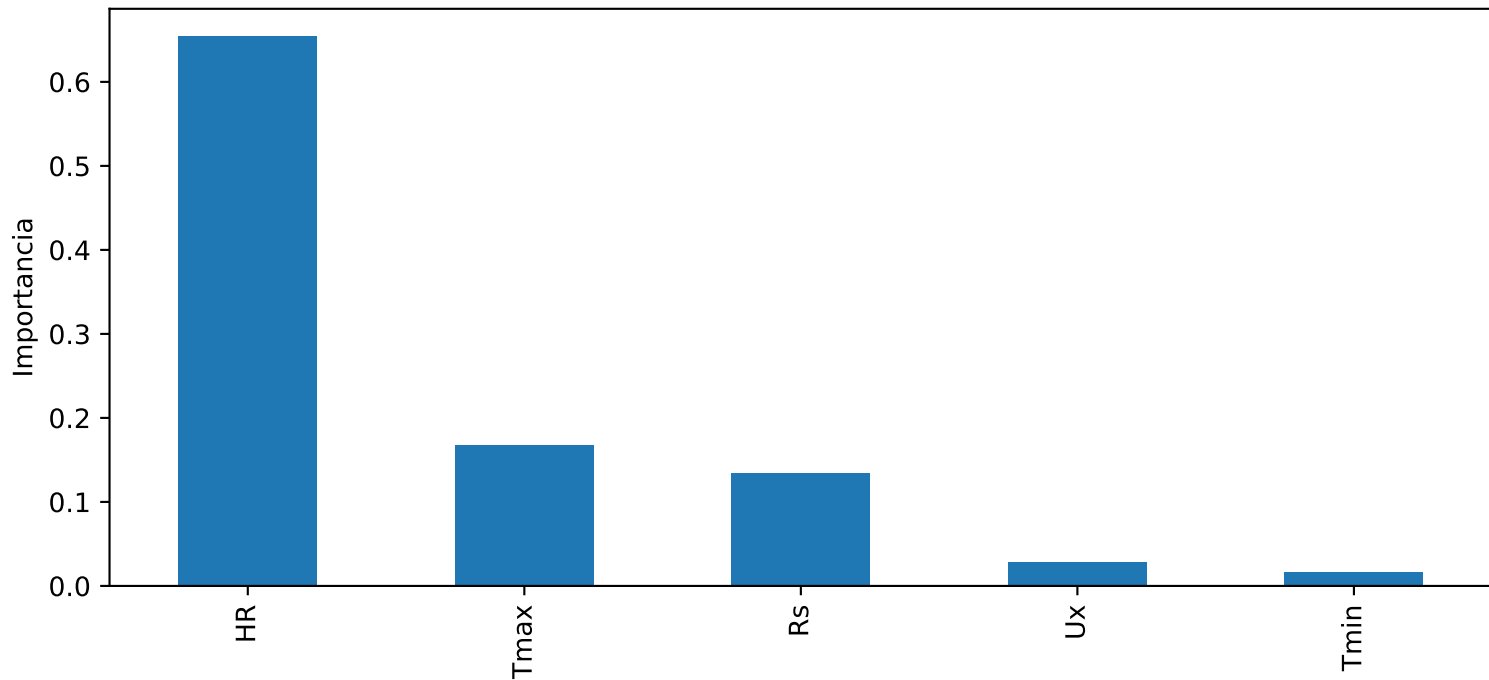
ET0 vs ETc



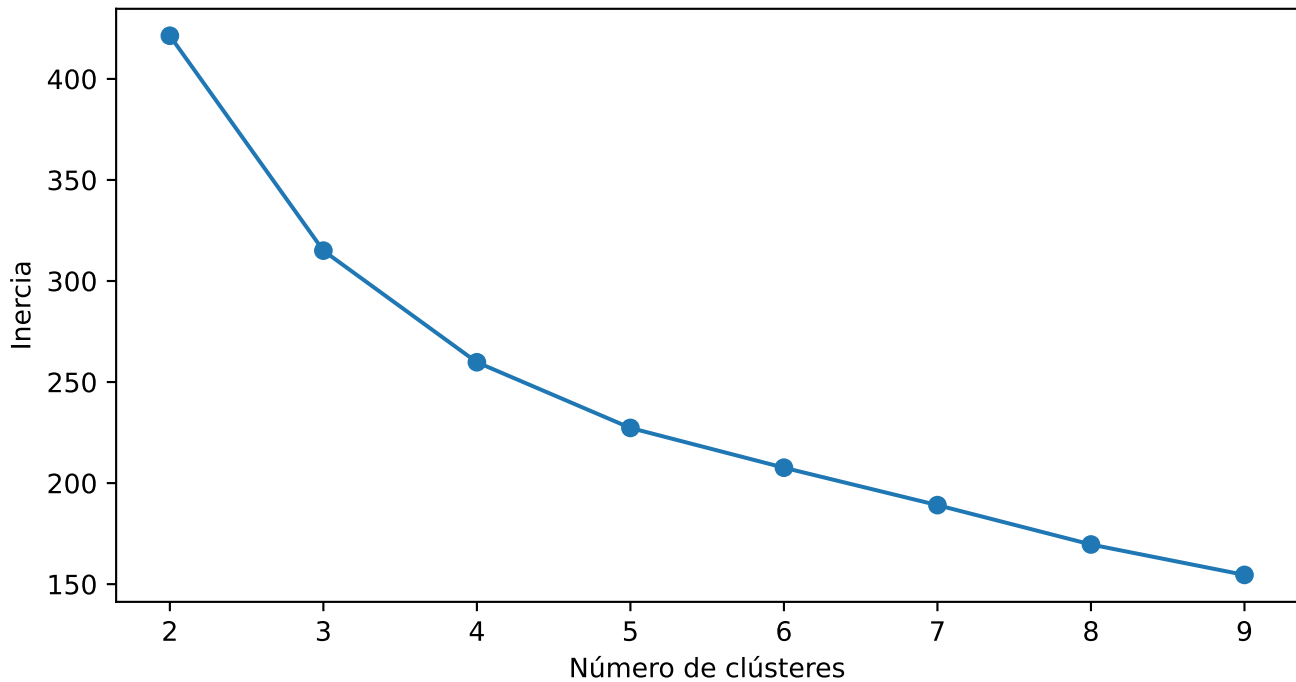
Comparación entre ET0 Real y Predicho — Ensenada (2019-2020)



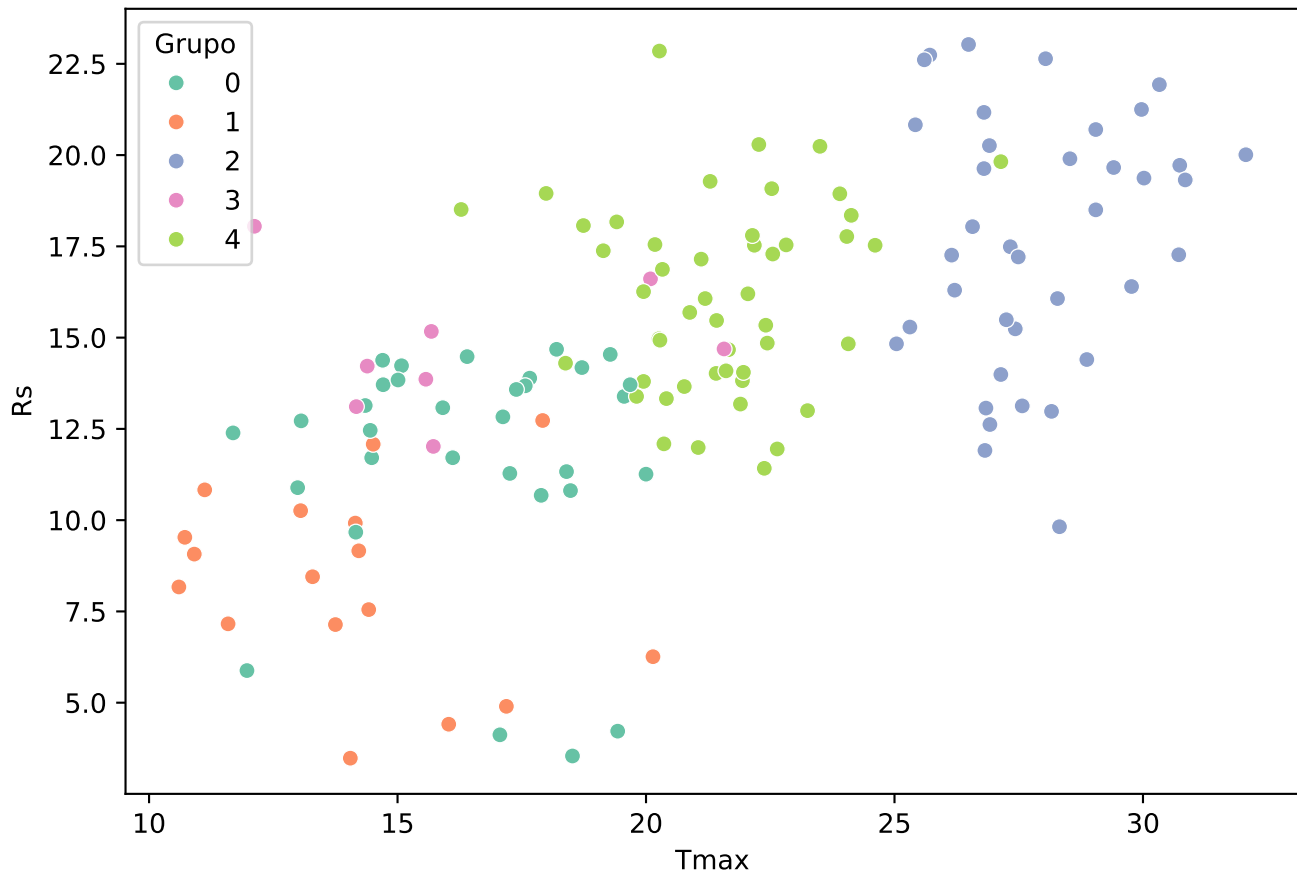
Importancia de variables (RF) — Ensenada (2019-2020)



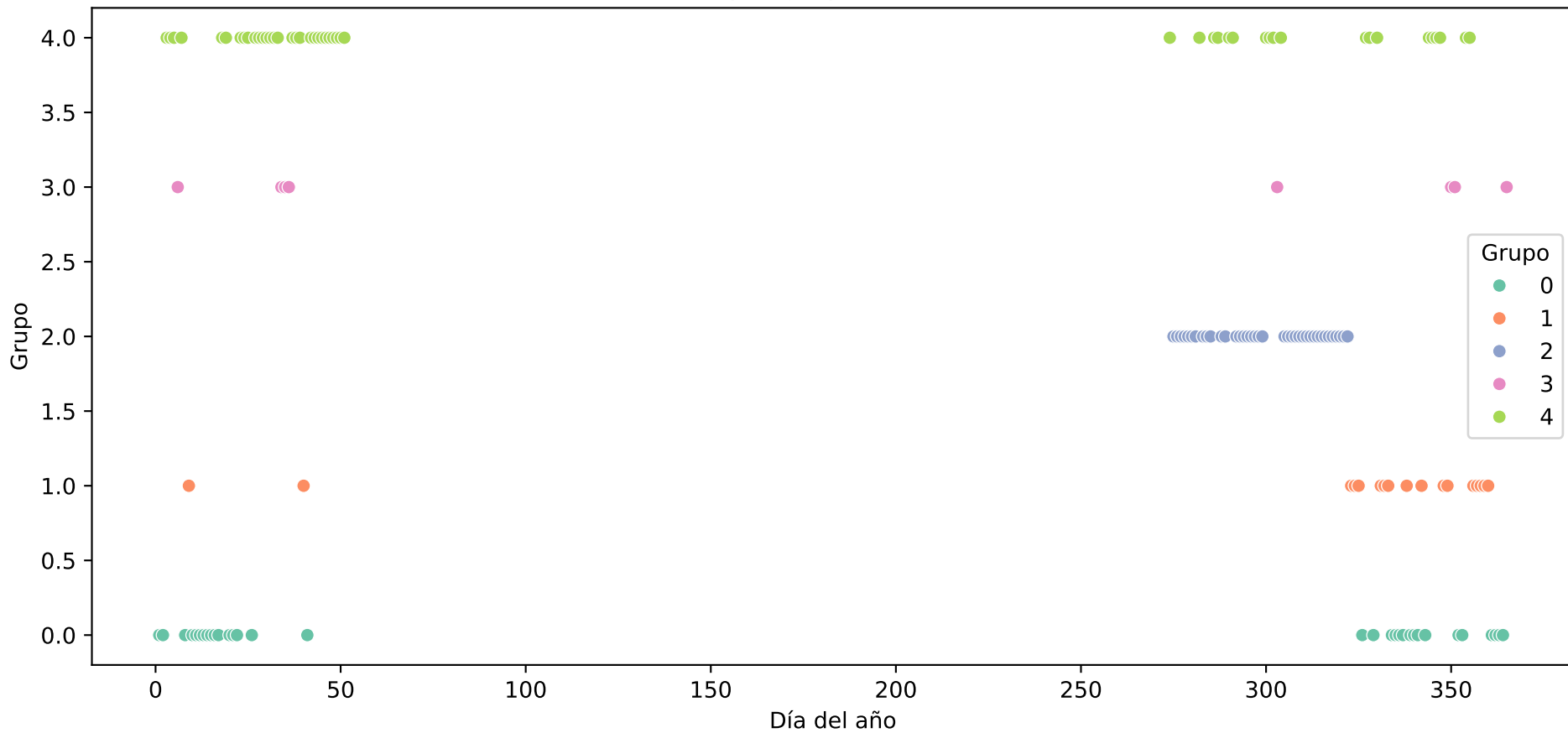
Método del codo



Clasificación de días climáticos — Ensenada (2019-2020)

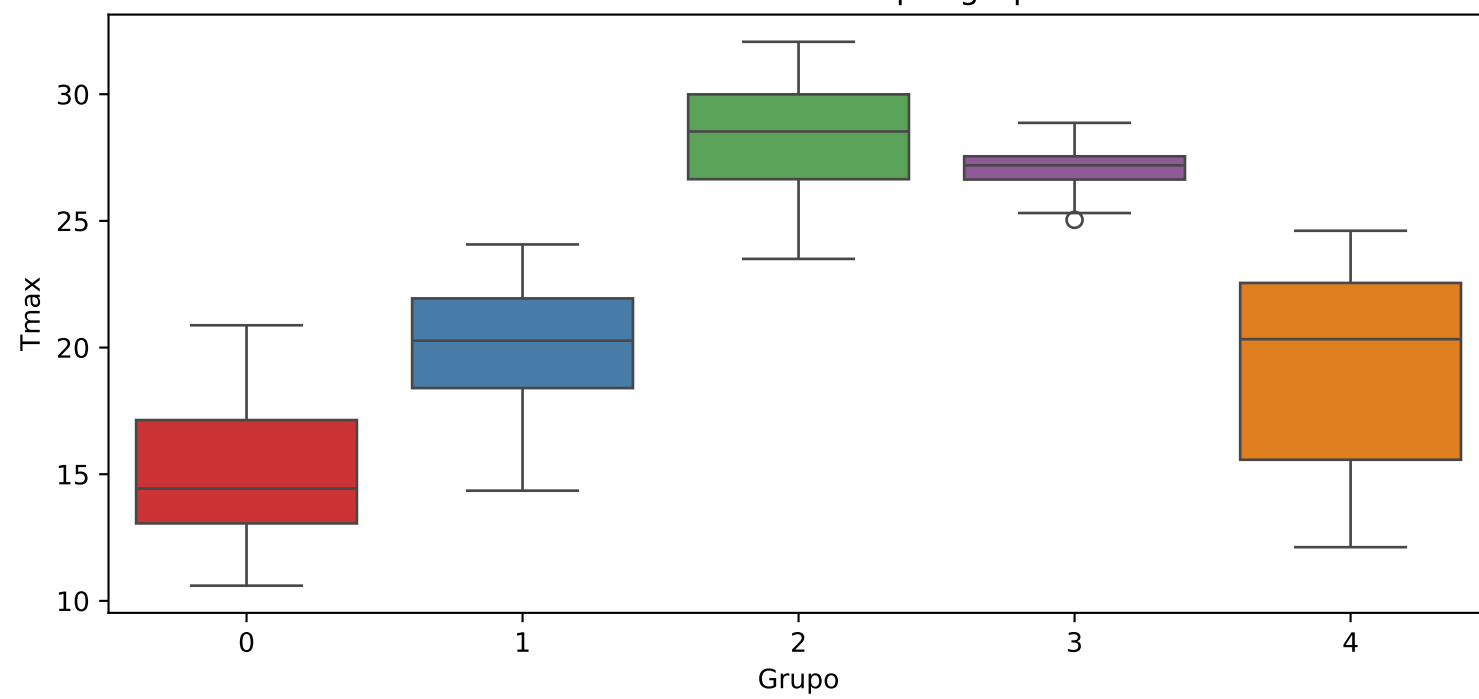


Distribución de días por grupo — Ensenada (2019-2020)

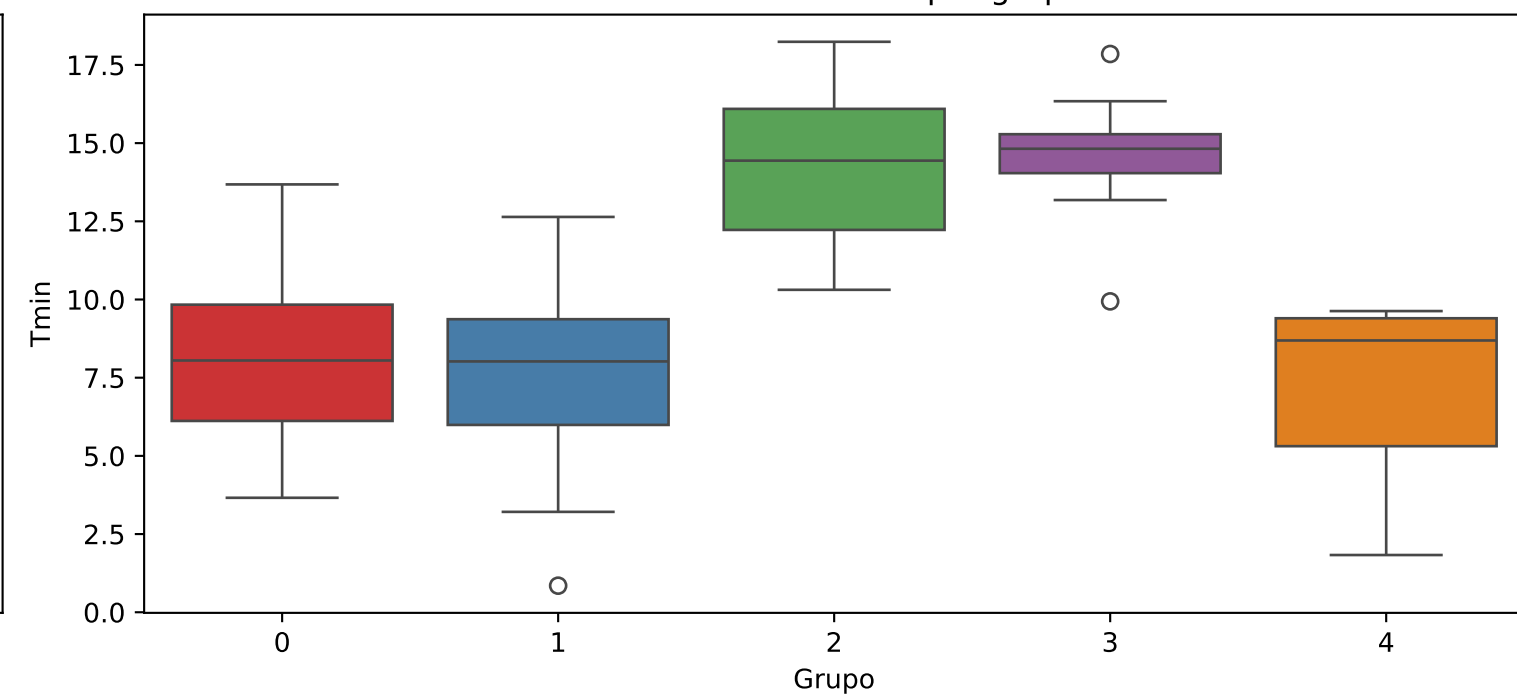


Boxplots por grupo — Ensenada (2019-2020)

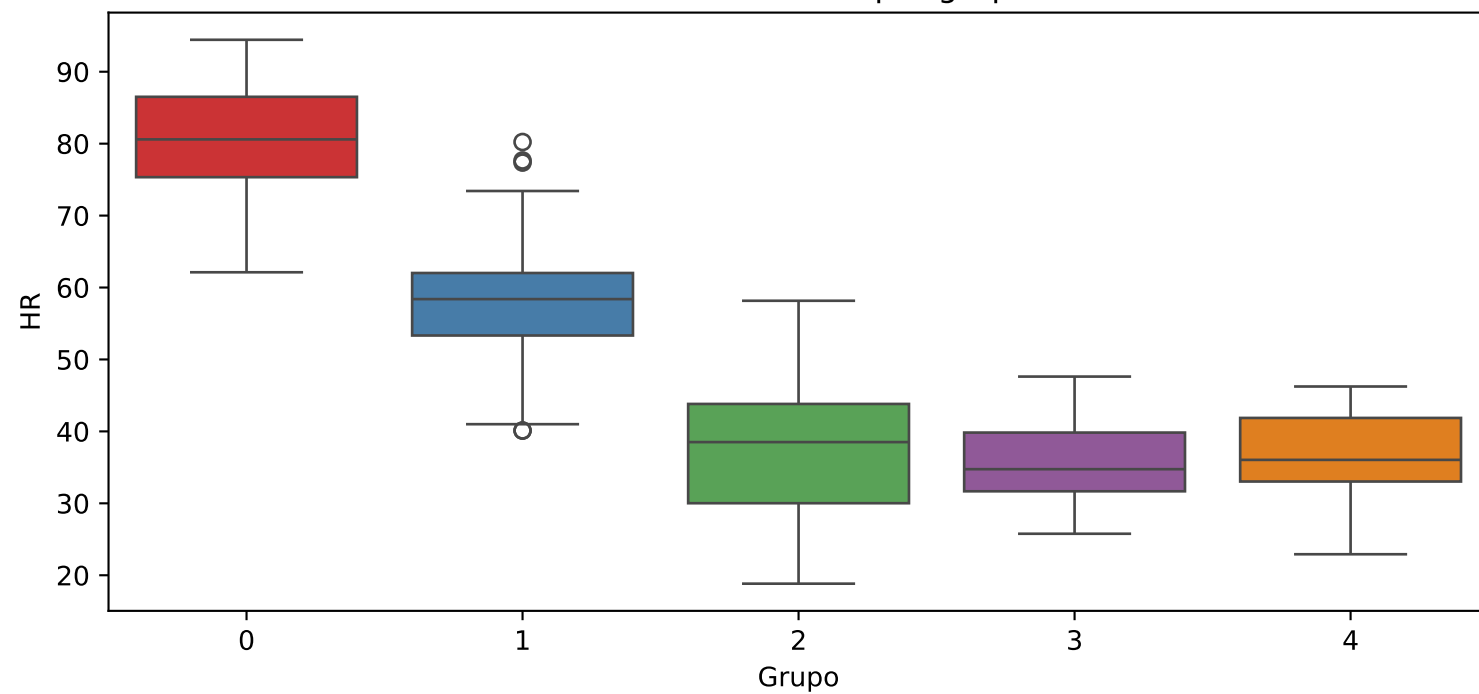
Distribución de Tmax por grupo



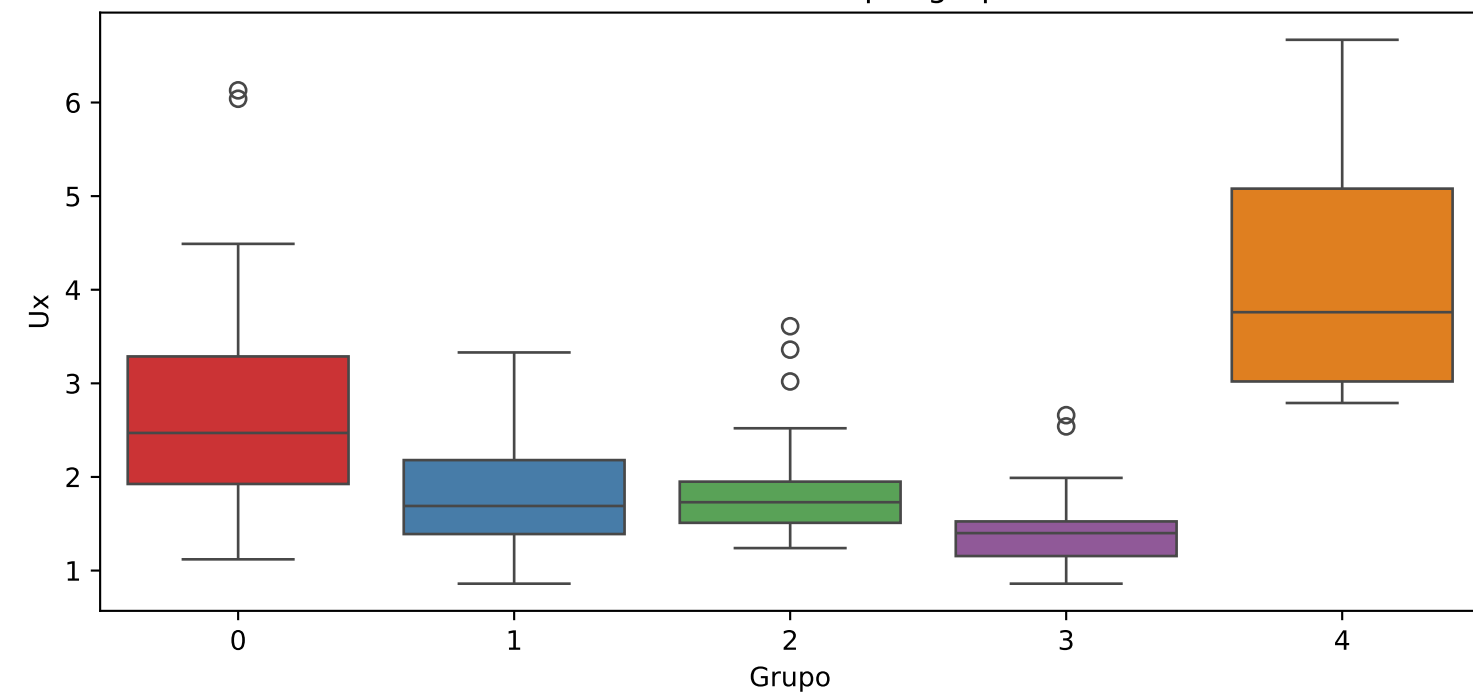
Distribución de Tmin por grupo



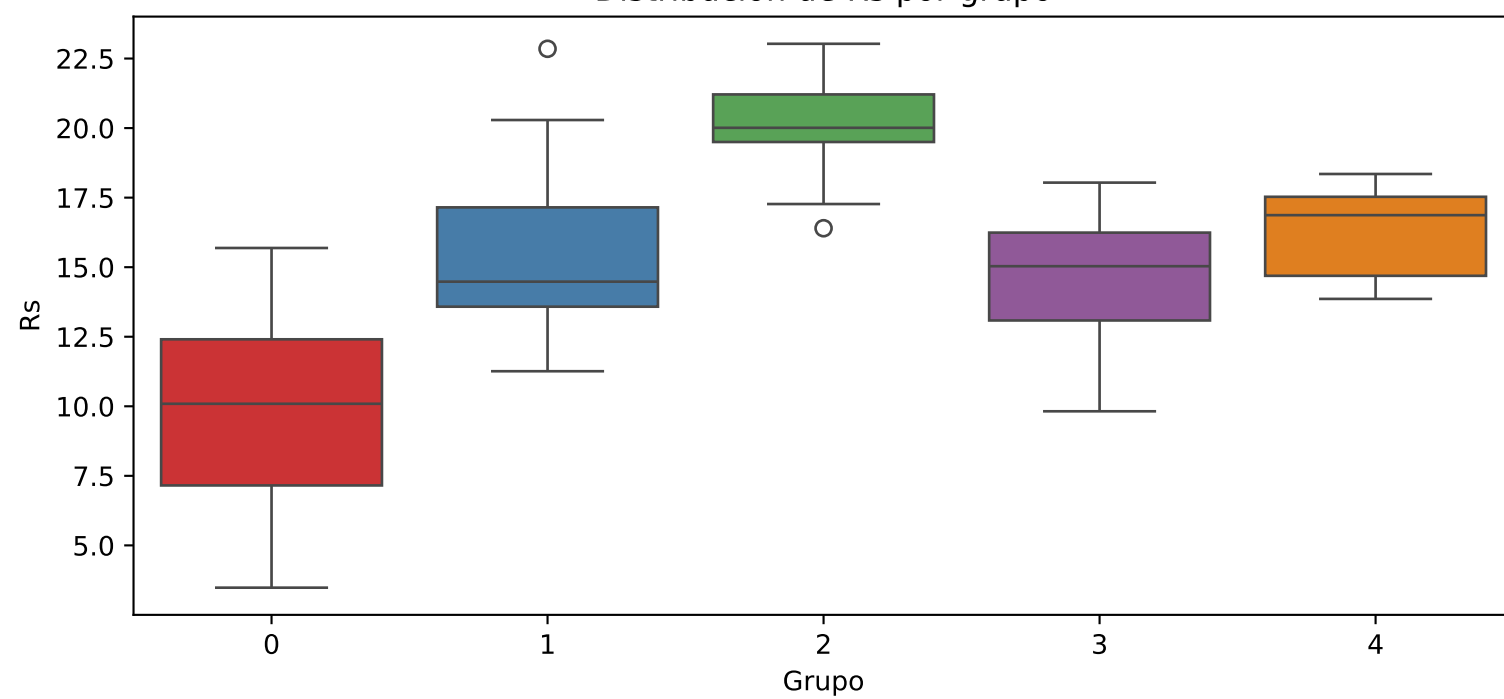
Distribución de HR por grupo



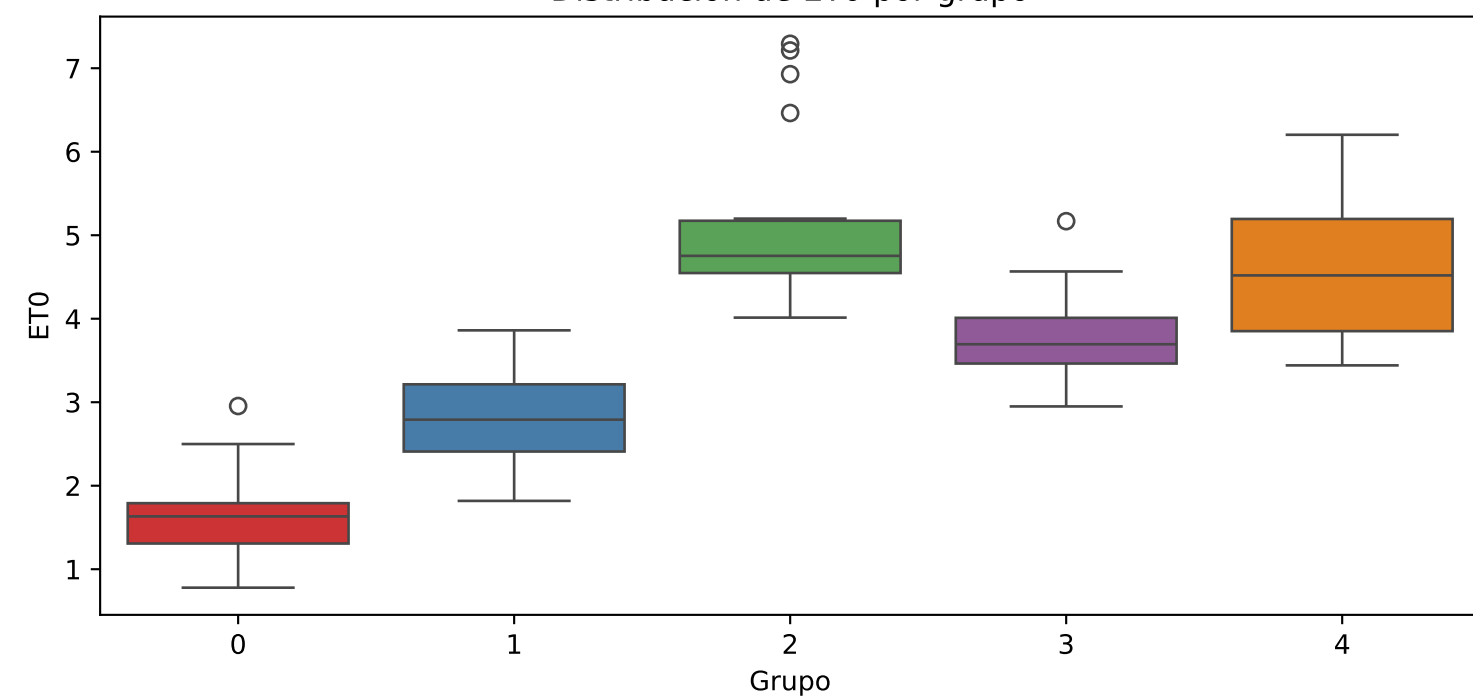
Distribución de Ux por grupo



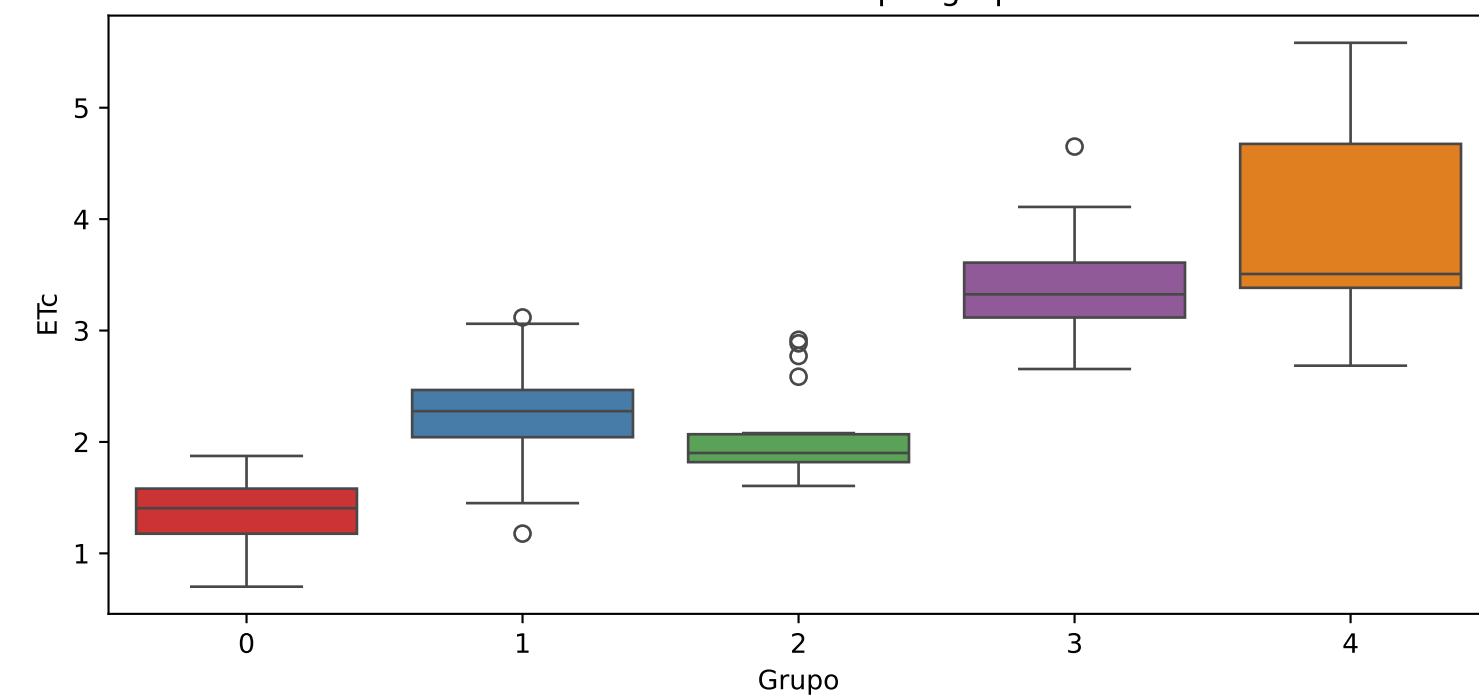
Distribución de Rs por grupo



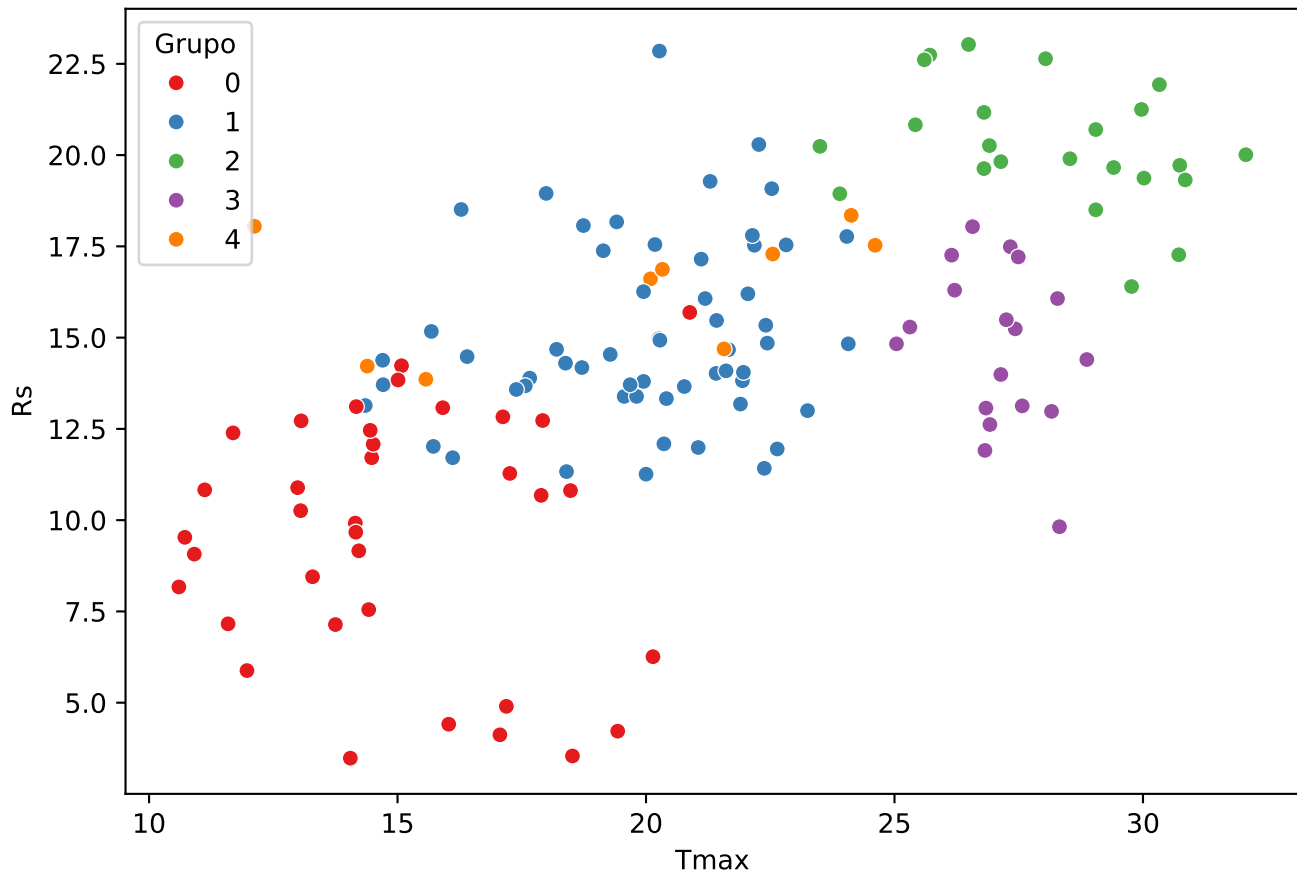
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2019-2020)



Ensenada — 2020-2021

Días del ciclo: 143

ETc total [mm]: 354.7

ETverde total [mm]: 22.5

ETazul total [mm]: 332.3

Tmax / Tmin [°C]: 35.9 / 2.9

Ensenada — 2020-2021 · Resultados y métricas

[Ensenada 2020-2021] Regresión Lineal ET0 — R^2 : 0.9484 MSE: 0.0771

[Ensenada 2020-2021] Random Forest ET0 — R^2 : 0.9335 MSE: 0.0994

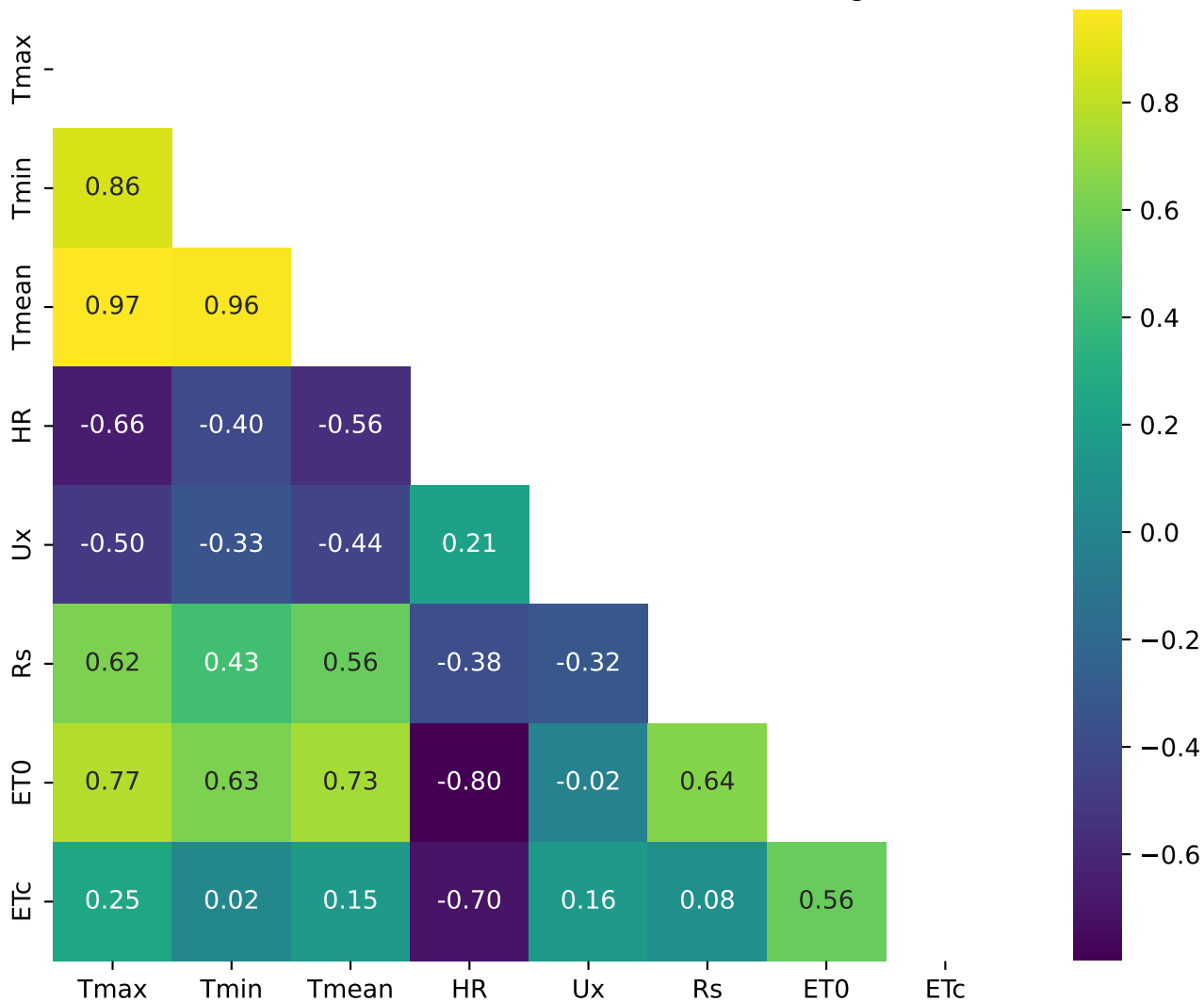
Importancias: {'Tmax': 0.10675627370872795, 'Tmin': 0.03801822038898742, 'HR': 0.670109671062923, 'Ux': 0.0495296670017006, 'Rs': 0.13558616783766114}

Estadísticas descriptivas por grupo (medias):

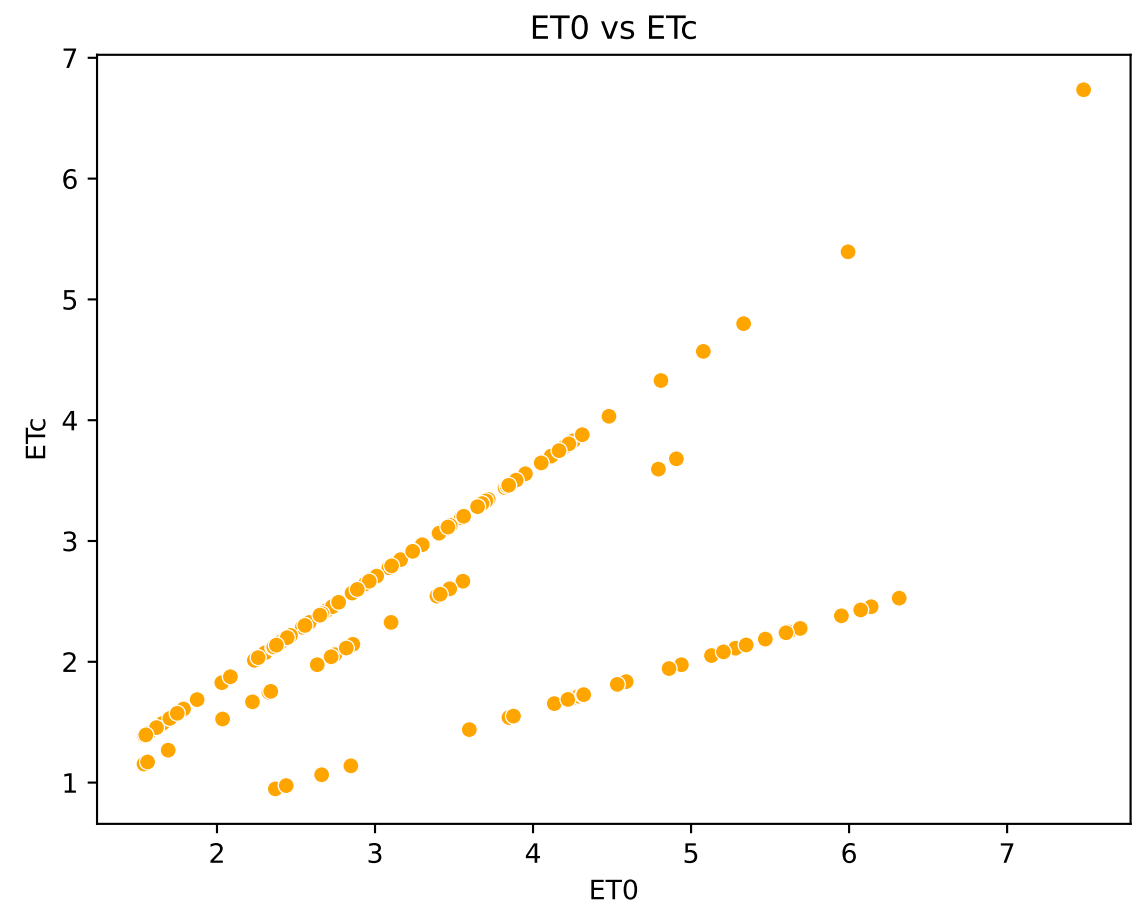
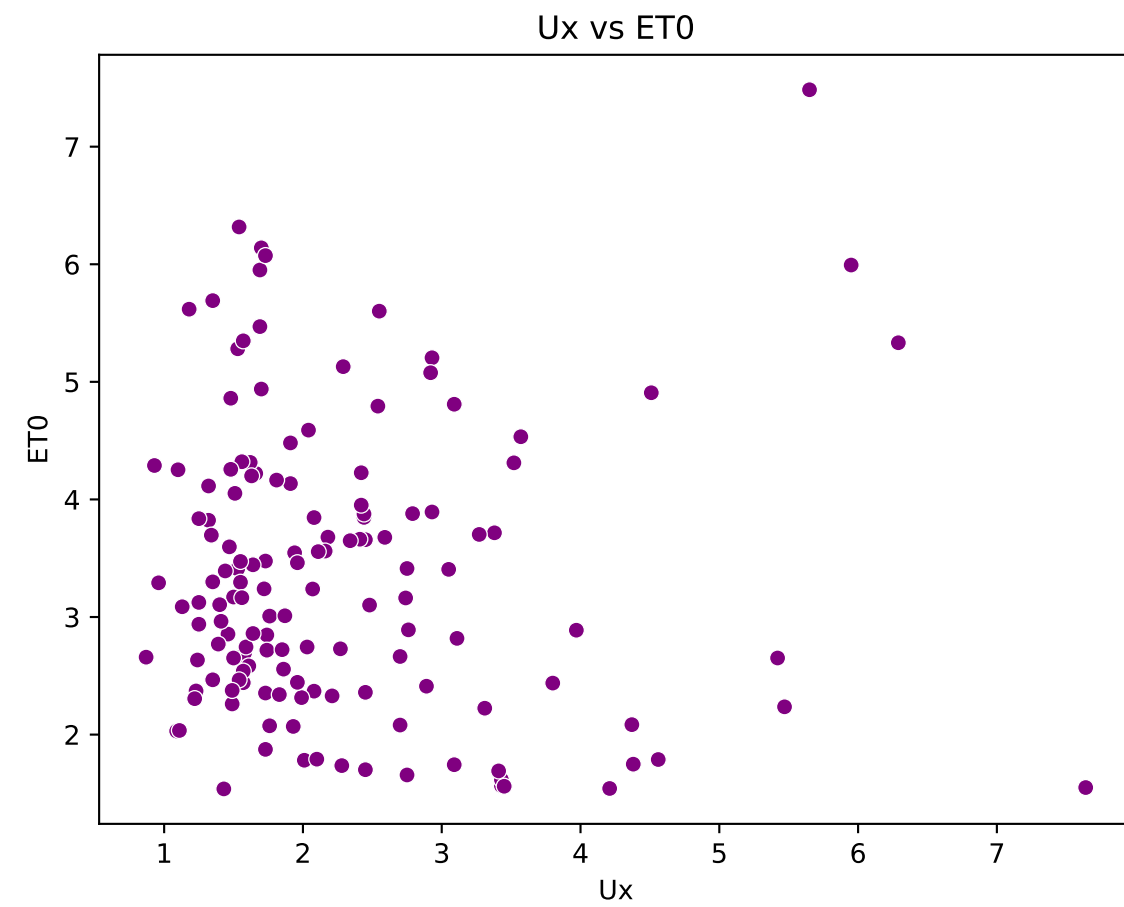
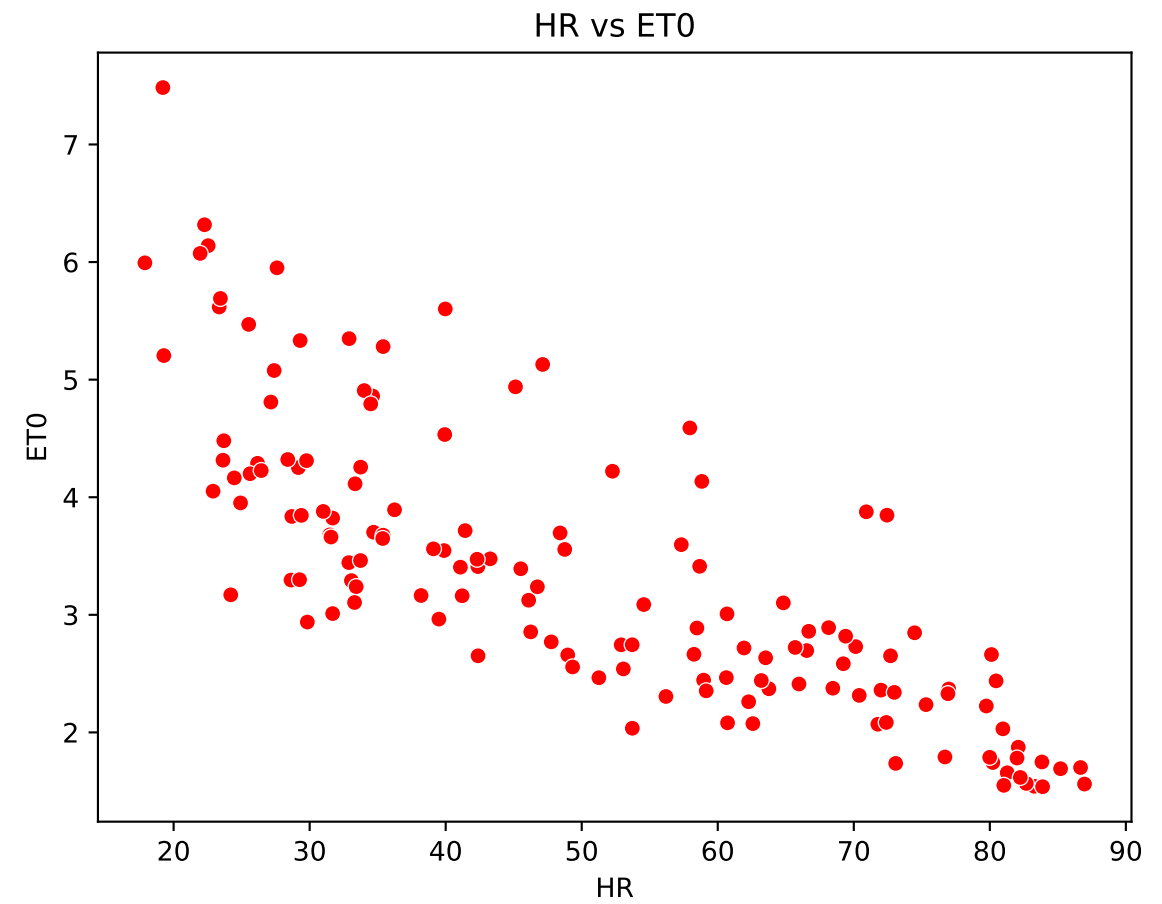
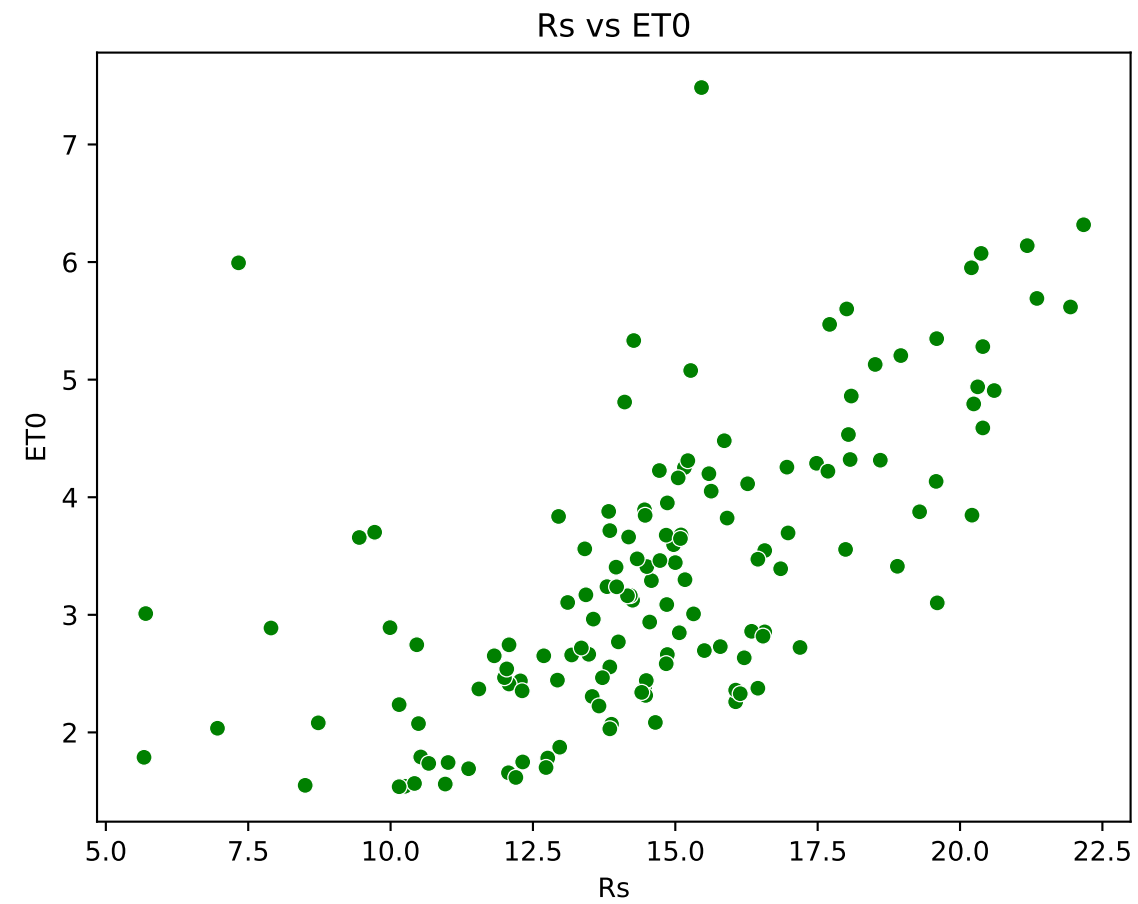
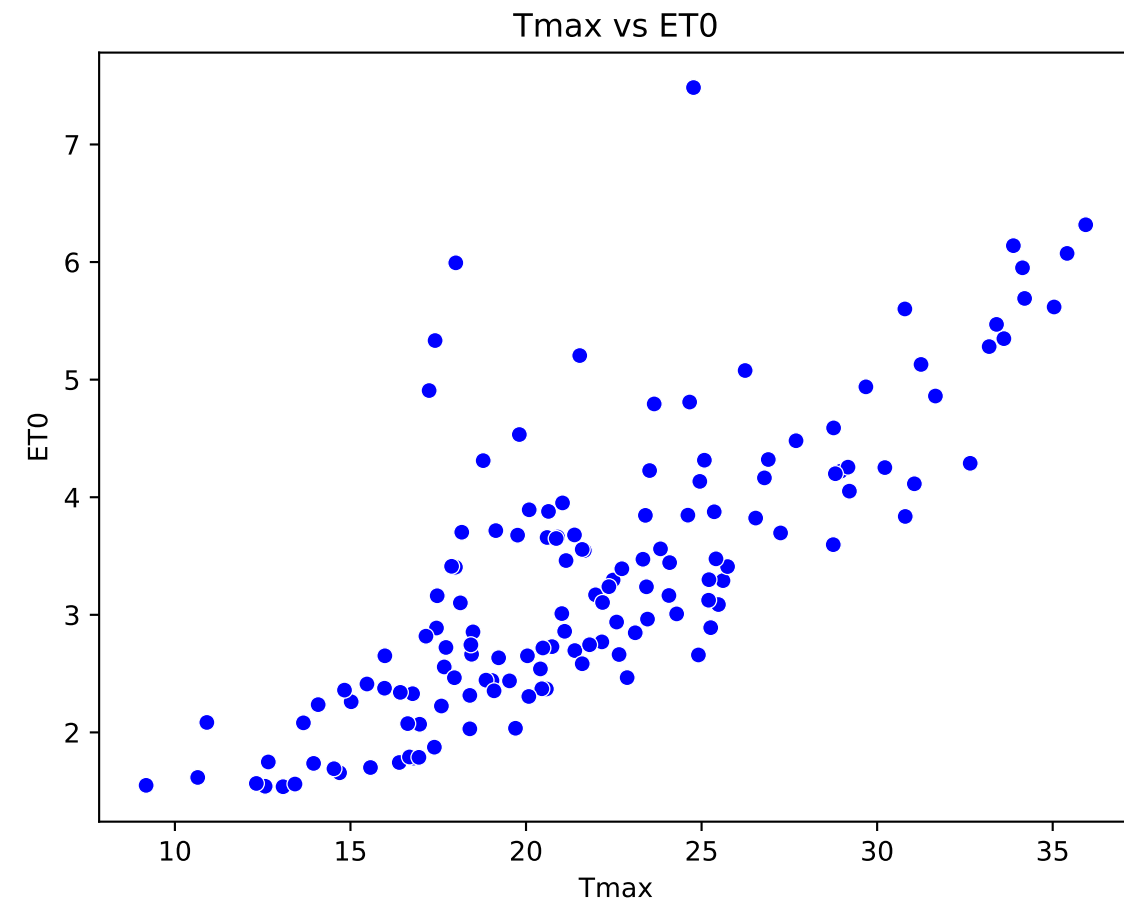
| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 14.423182 | 7.424545 | 77.854091 | 3.660909 | 10.954091 | 1.920303 | 1.625033 |
| 1 | 20.060000 | 10.680000 | 22.133333 | 5.963333 | 12.353333 | 6.269969 | 5.642973 |
| 2 | 31.061364 | 18.416818 | 38.876364 | 1.706818 | 19.212273 | 4.979381 | 1.991752 |
| 3 | 23.280377 | 9.813962 | 34.268868 | 2.083019 | 14.926604 | 3.753365 | 3.188507 |
| 4 | 19.426047 | 8.678372 | 63.696279 | 1.786512 | 14.104651 | 2.533347 | 2.075154 |

Ensenada — 2020-2021

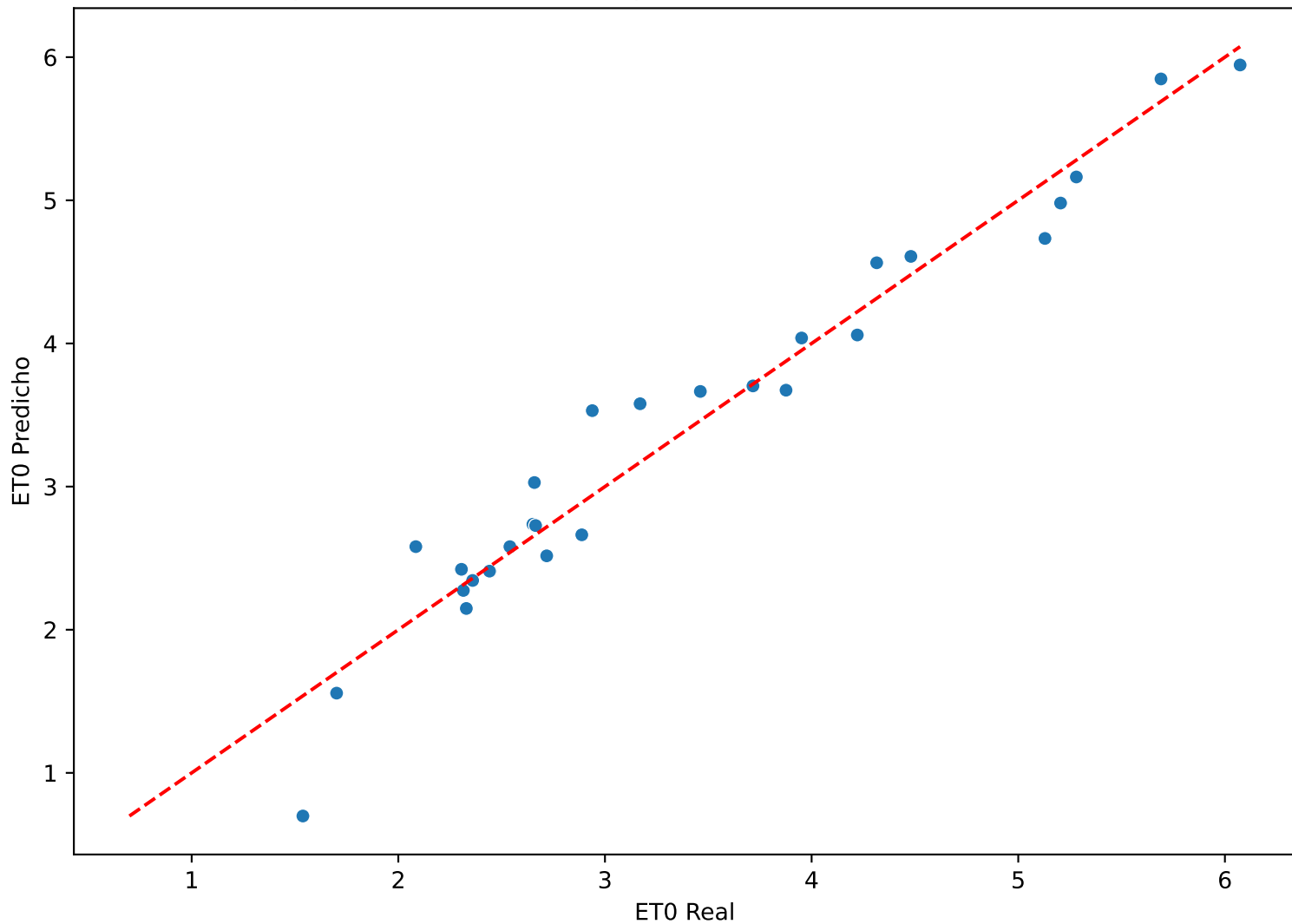
Matriz de Correlación entre Variables Meteorológicas



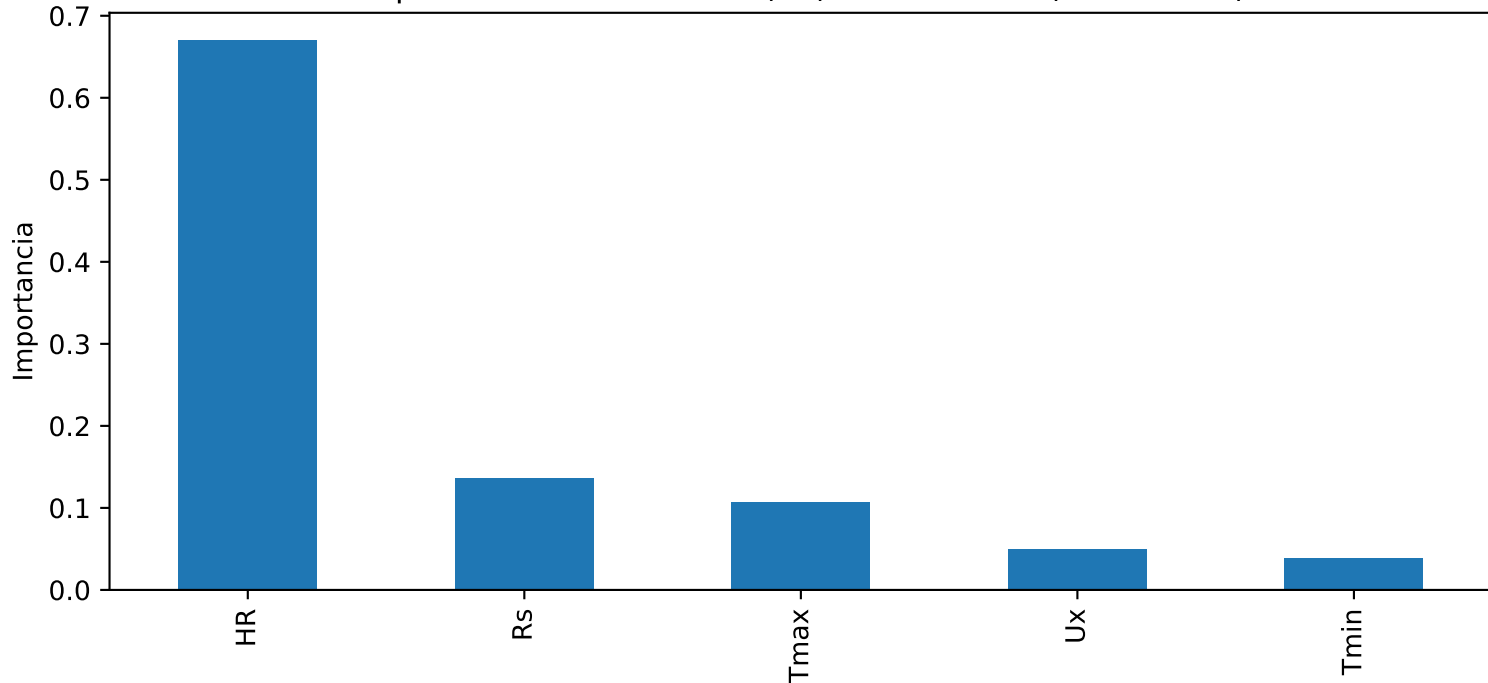
Dispersión — Ensenada (2020-2021)



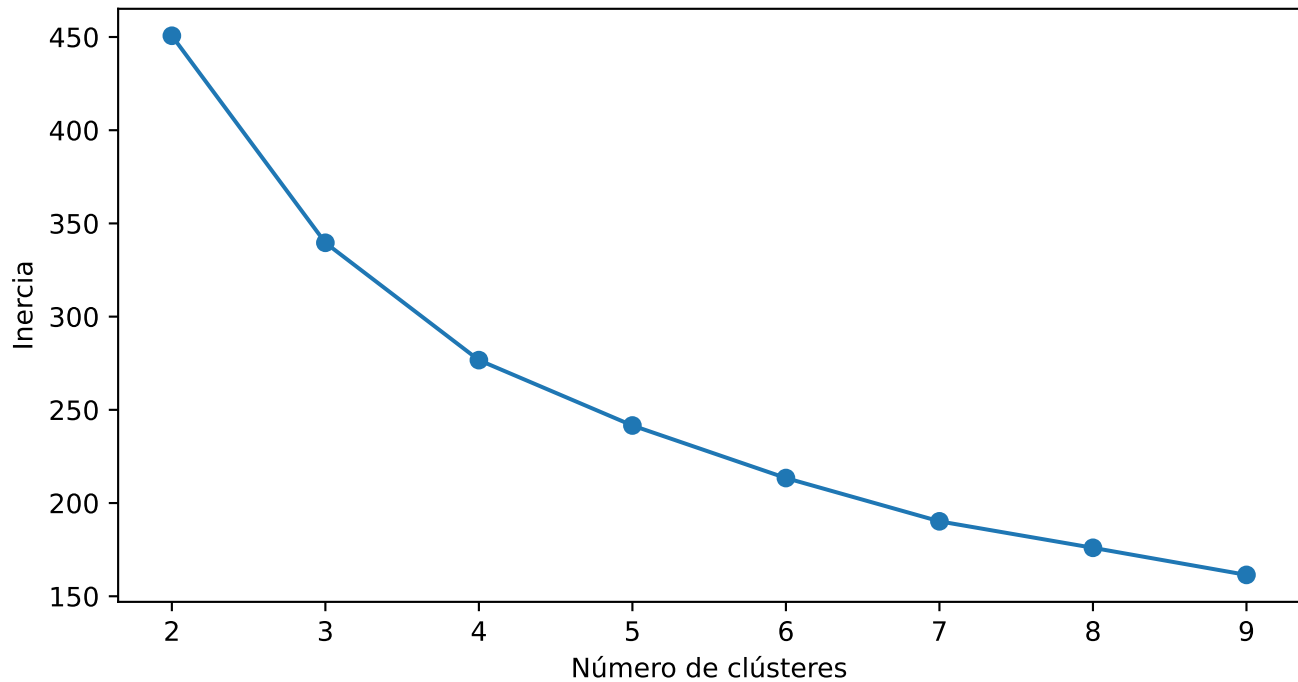
Comparación entre ET0 Real y Predicho — Ensenada (2020-2021)



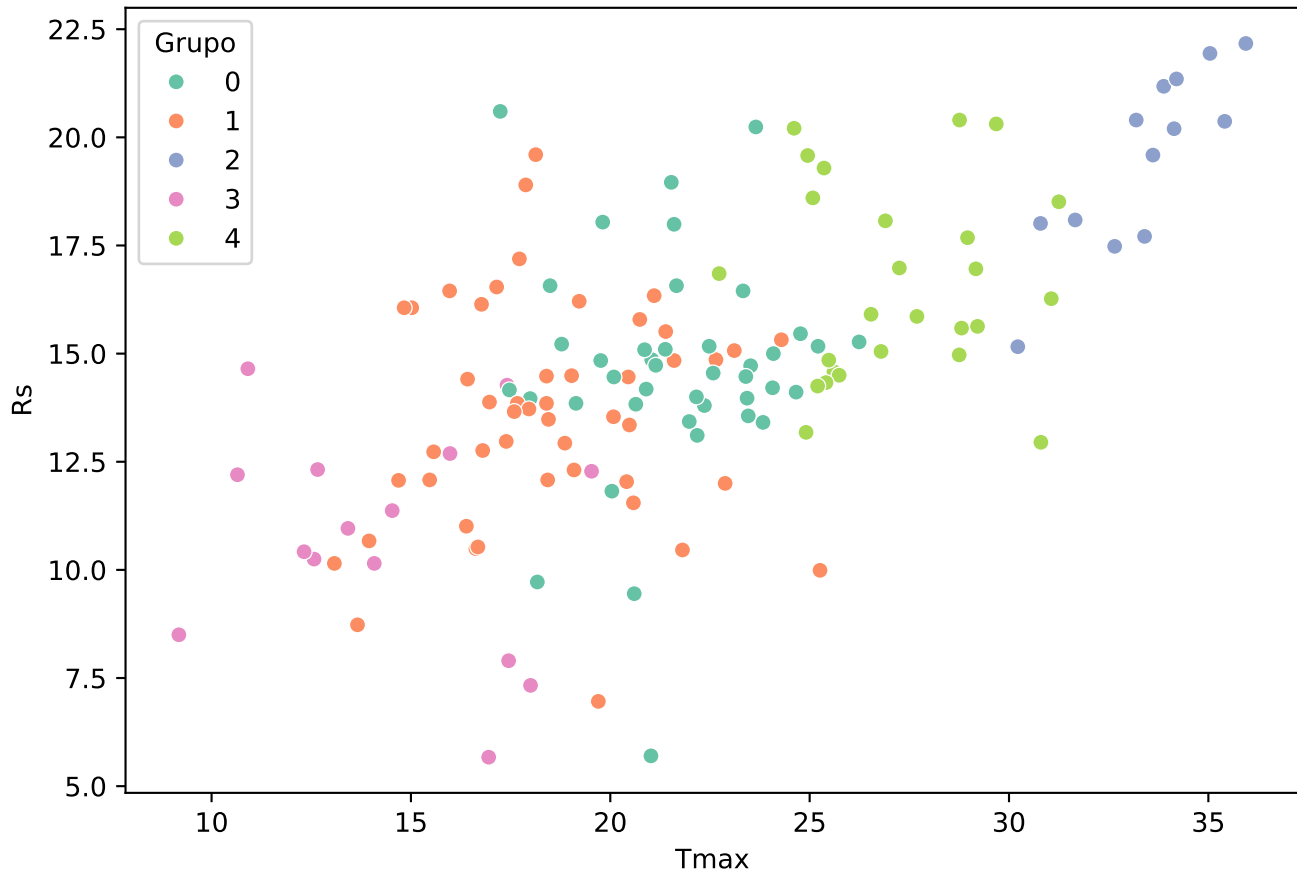
Importancia de variables (RF) — Ensenada (2020-2021)



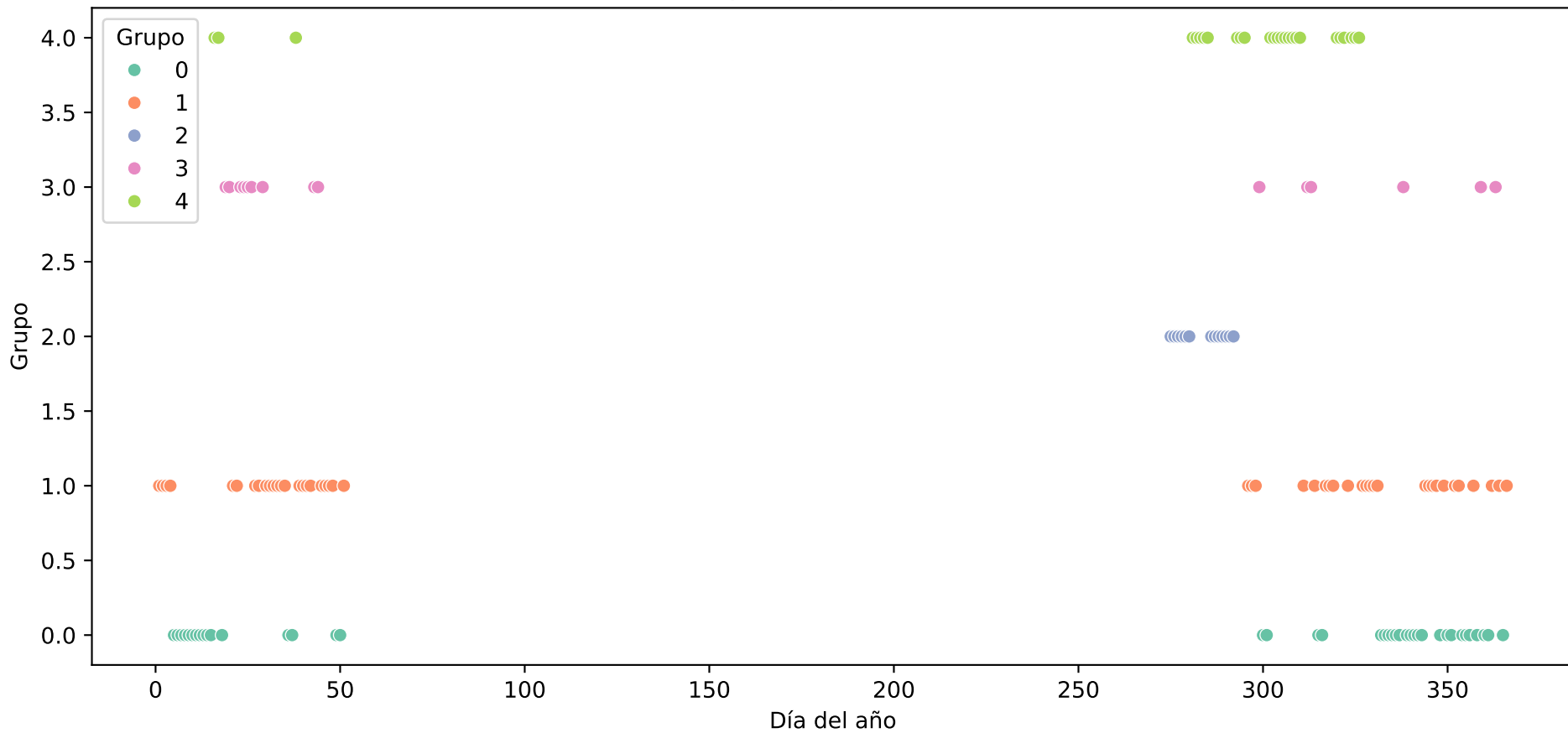
Método del codo



Clasificación de días climáticos — Ensenada (2020-2021)

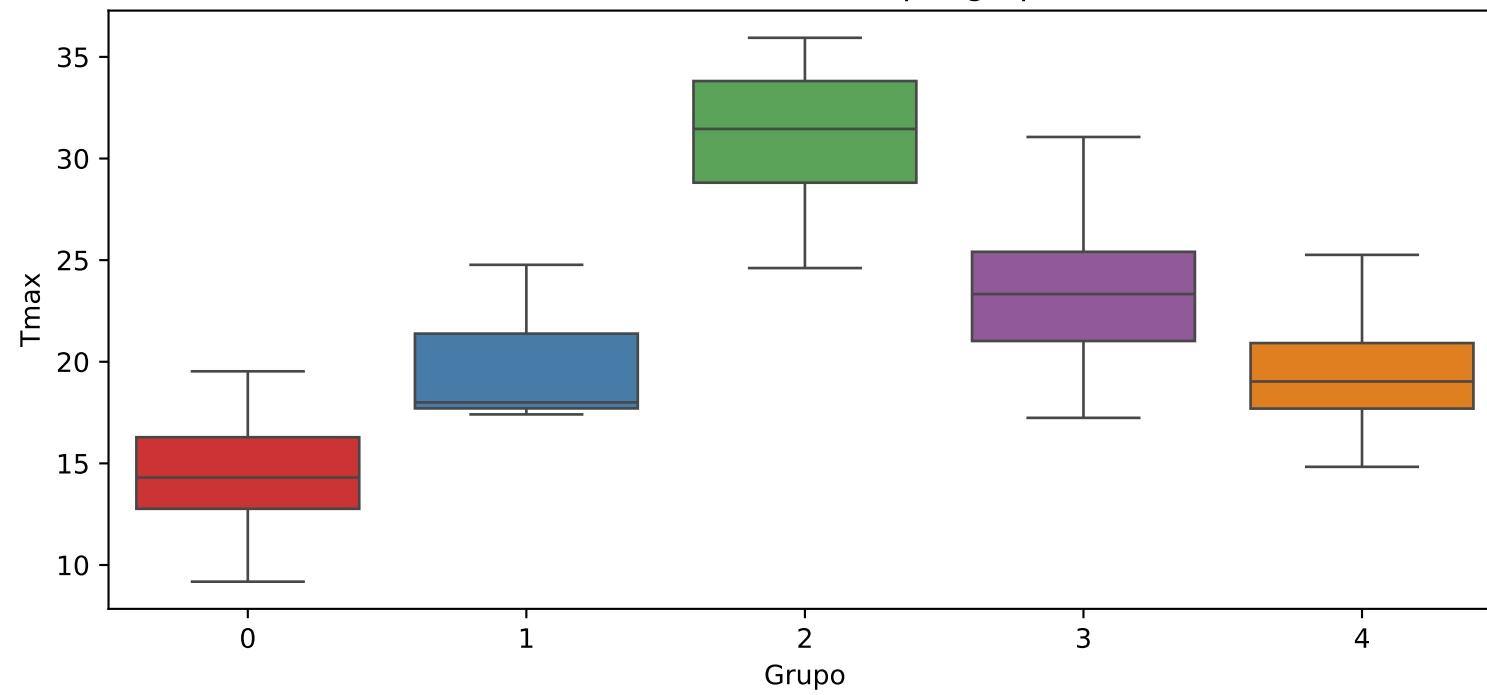


Distribución de días por grupo — Ensenada (2020-2021)

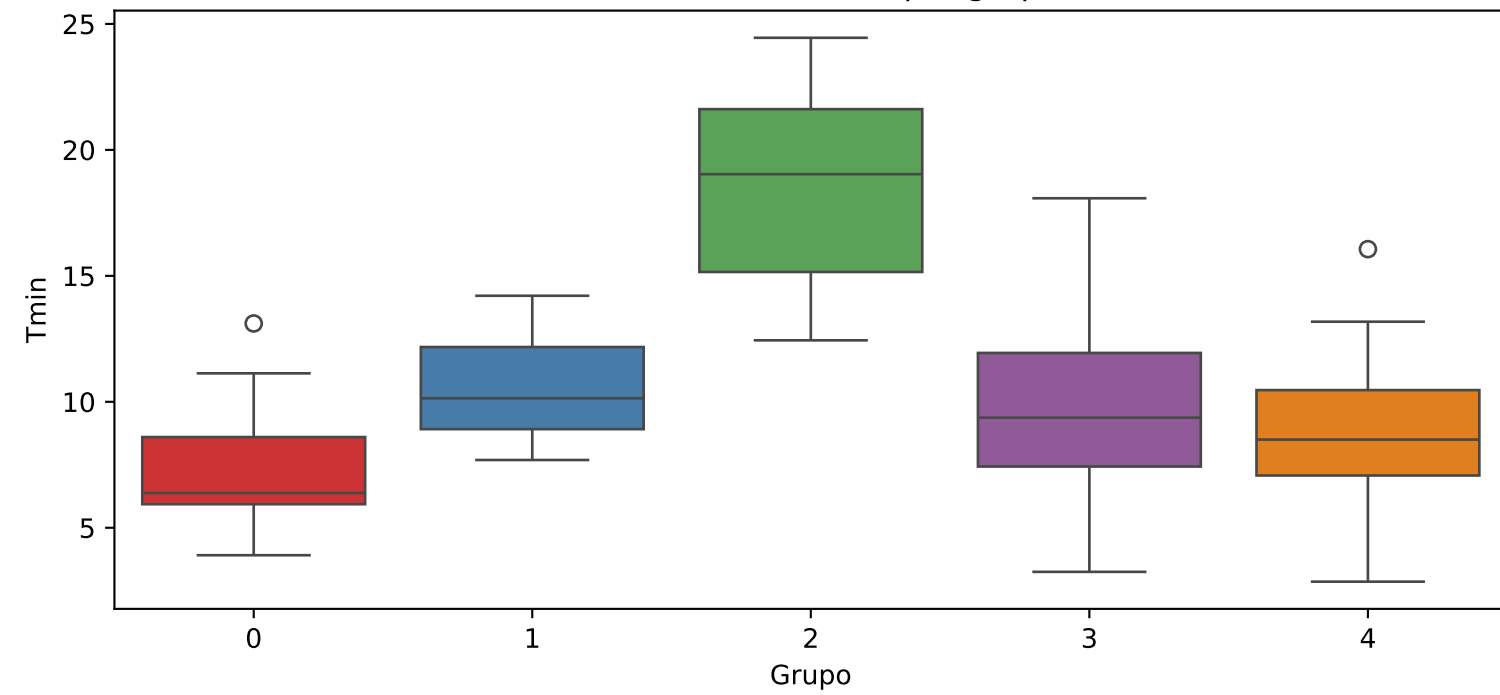


Boxplots por grupo — Ensenada (2020-2021)

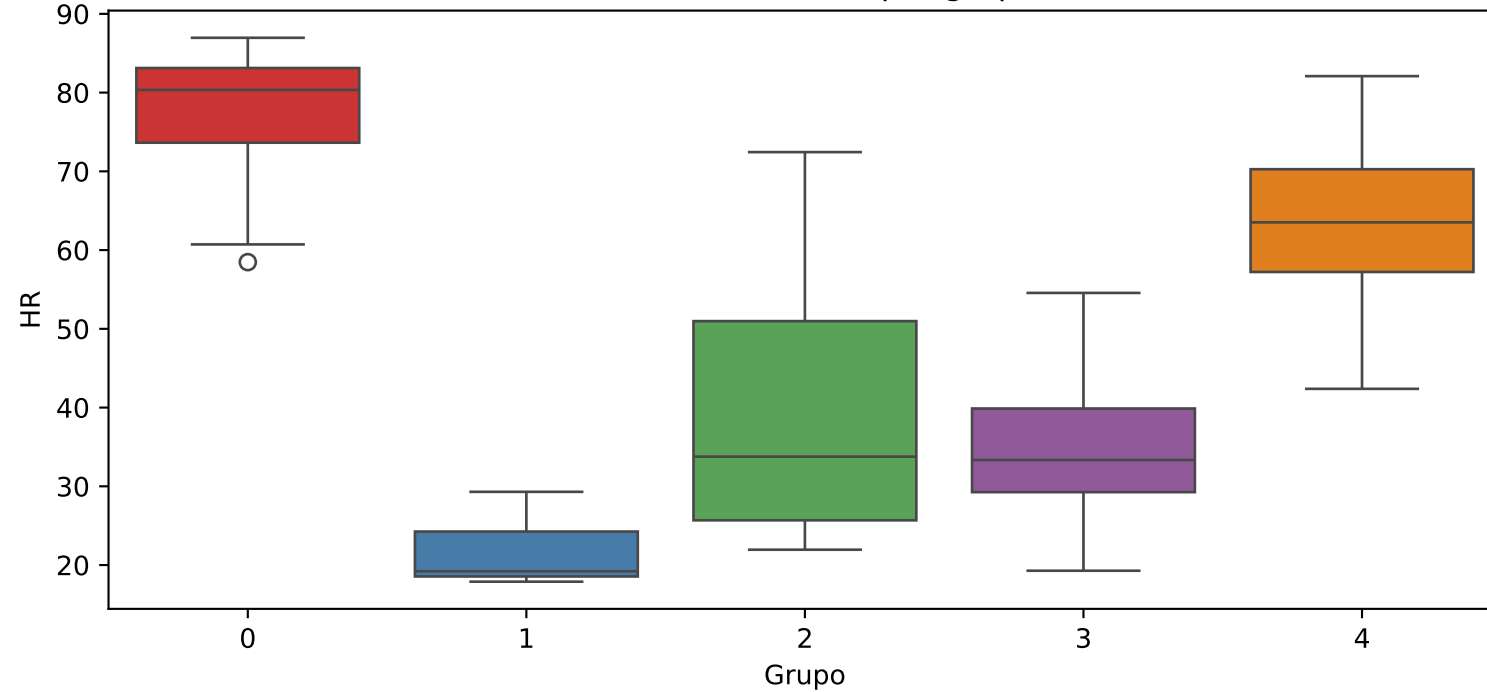
Distribución de Tmax por grupo



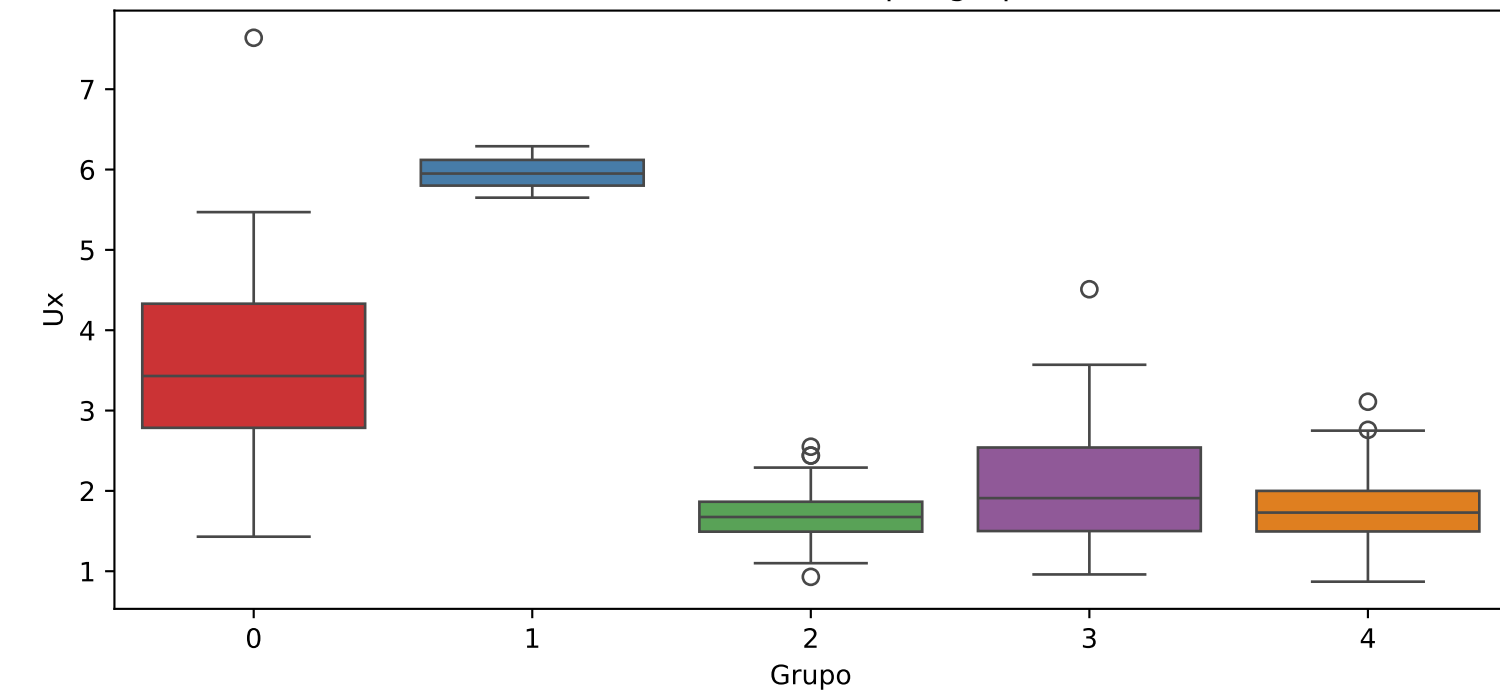
Distribución de Tmin por grupo



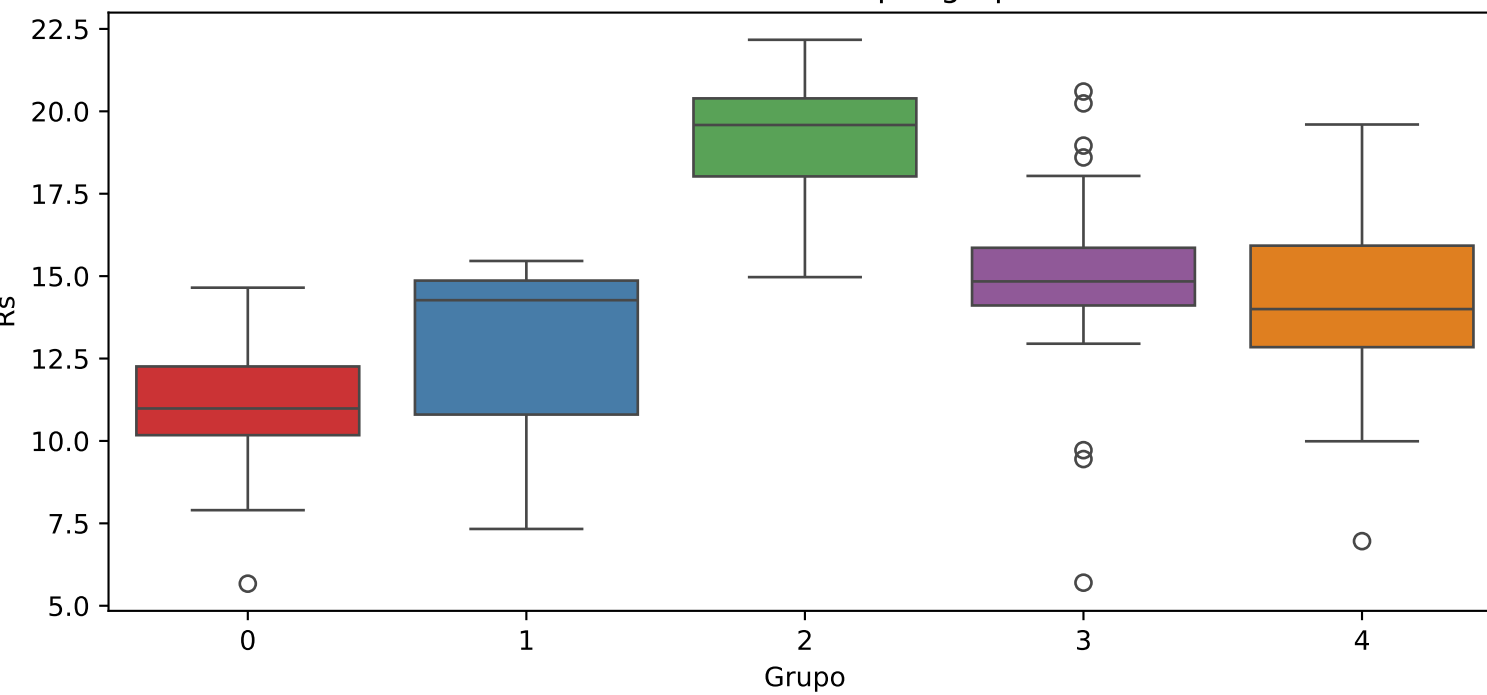
Distribución de HR por grupo



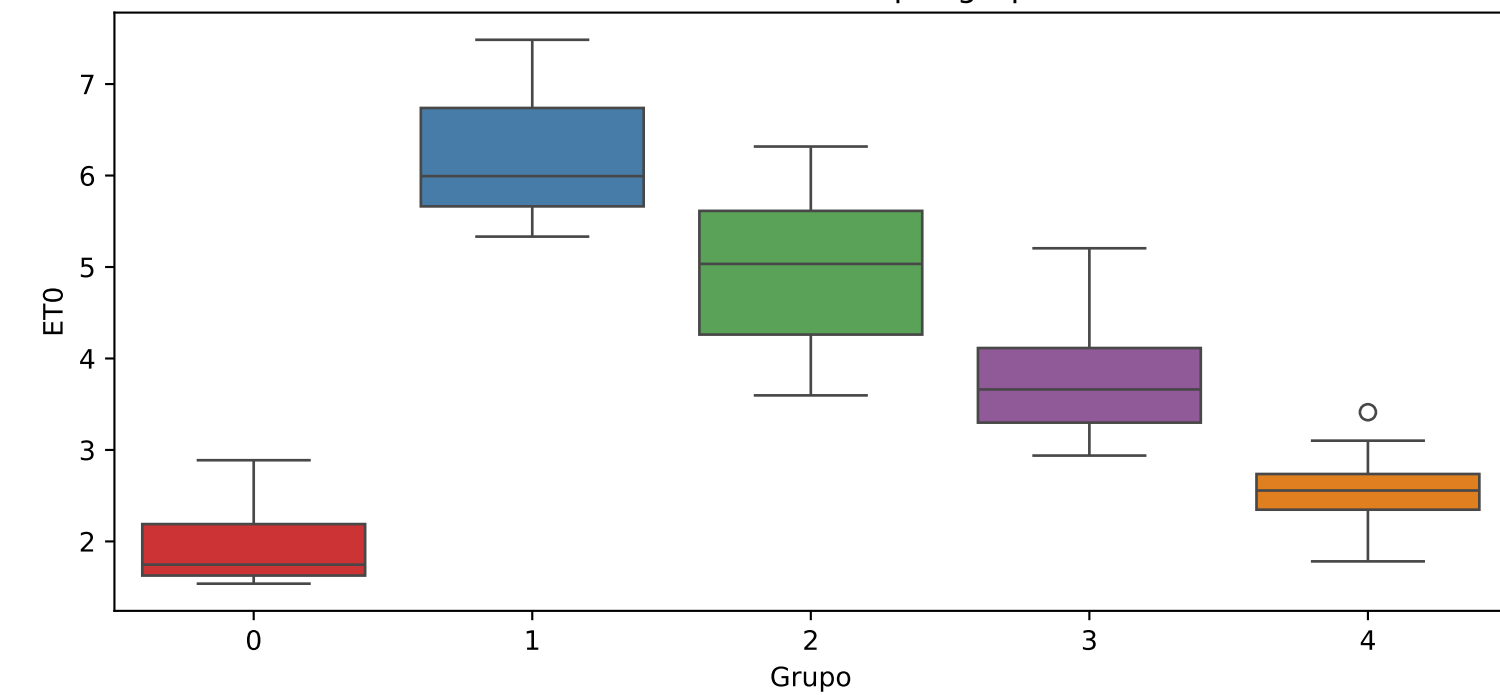
Distribución de Ux por grupo



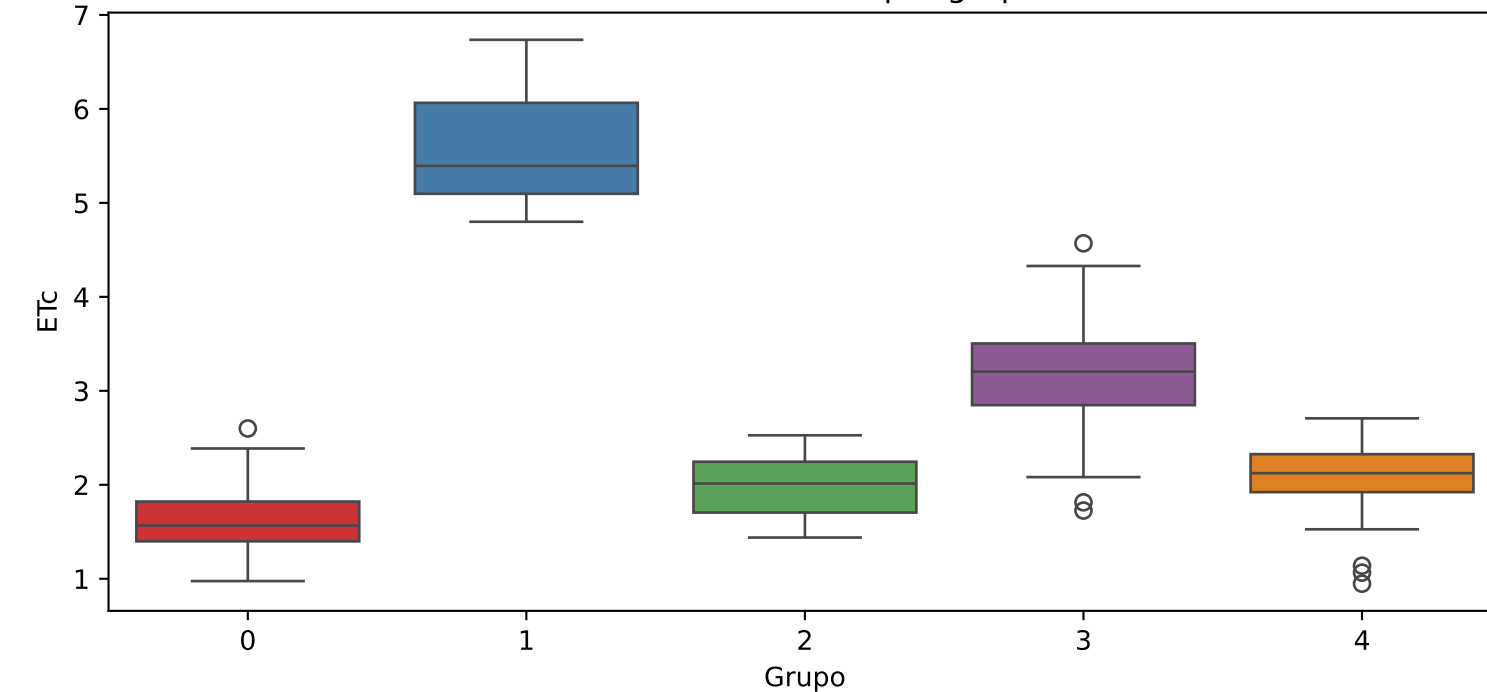
Distribución de Rs por grupo



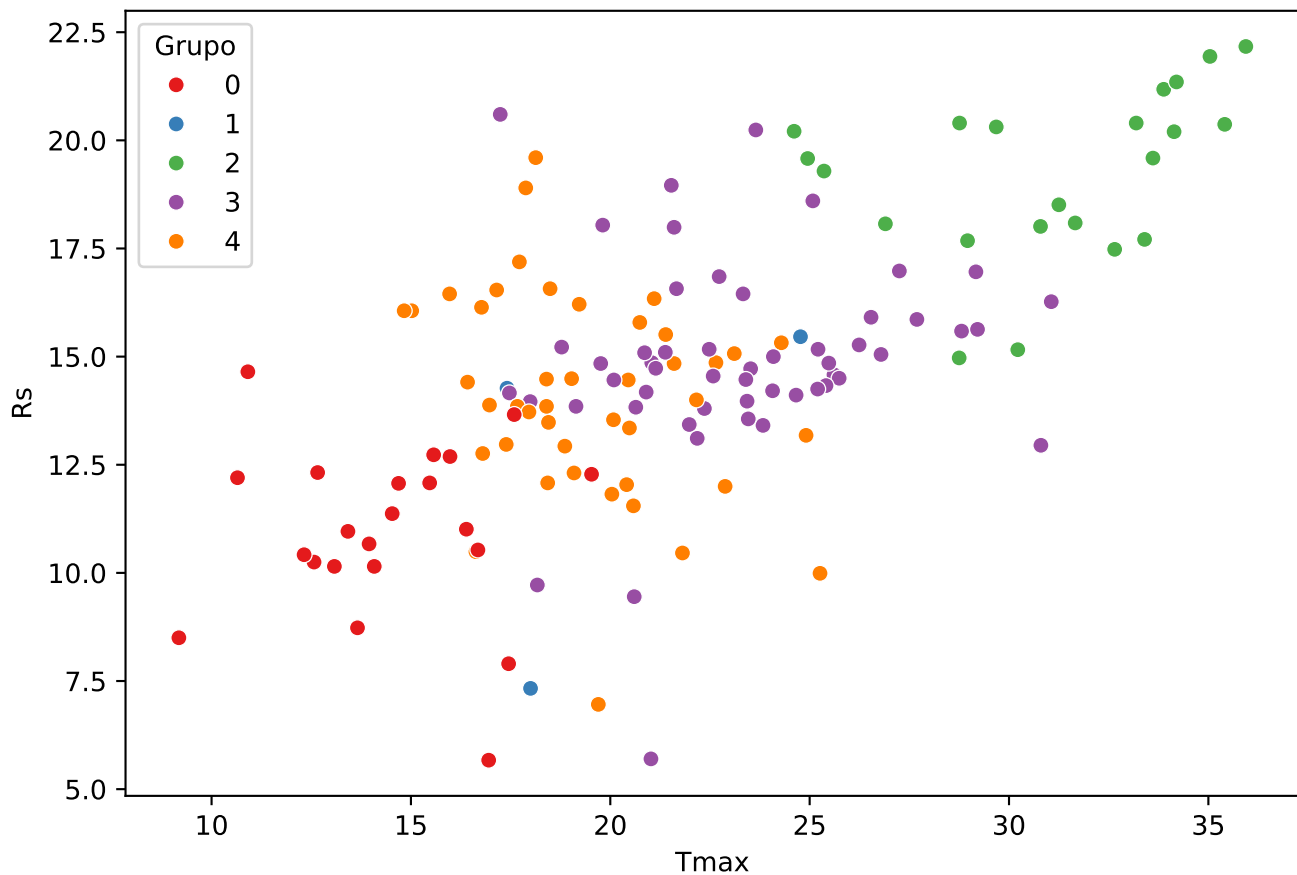
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2020-2021)



Ensenada — 2021-2022

Días del ciclo: 143

ETc total [mm]: 336.3

ETverde total [mm]: 20.1

ETazul total [mm]: 316.2

Tmax / Tmin [°C]: 30.6 / 2.3

Ensenada — 2021-2022 · Resultados y métricas

[Ensenada 2021-2022] Regresión Lineal ET0 — R^2 : 0.9547 MSE: 0.0697

[Ensenada 2021-2022] Random Forest ET0 — R^2 : 0.7734 MSE: 0.3487

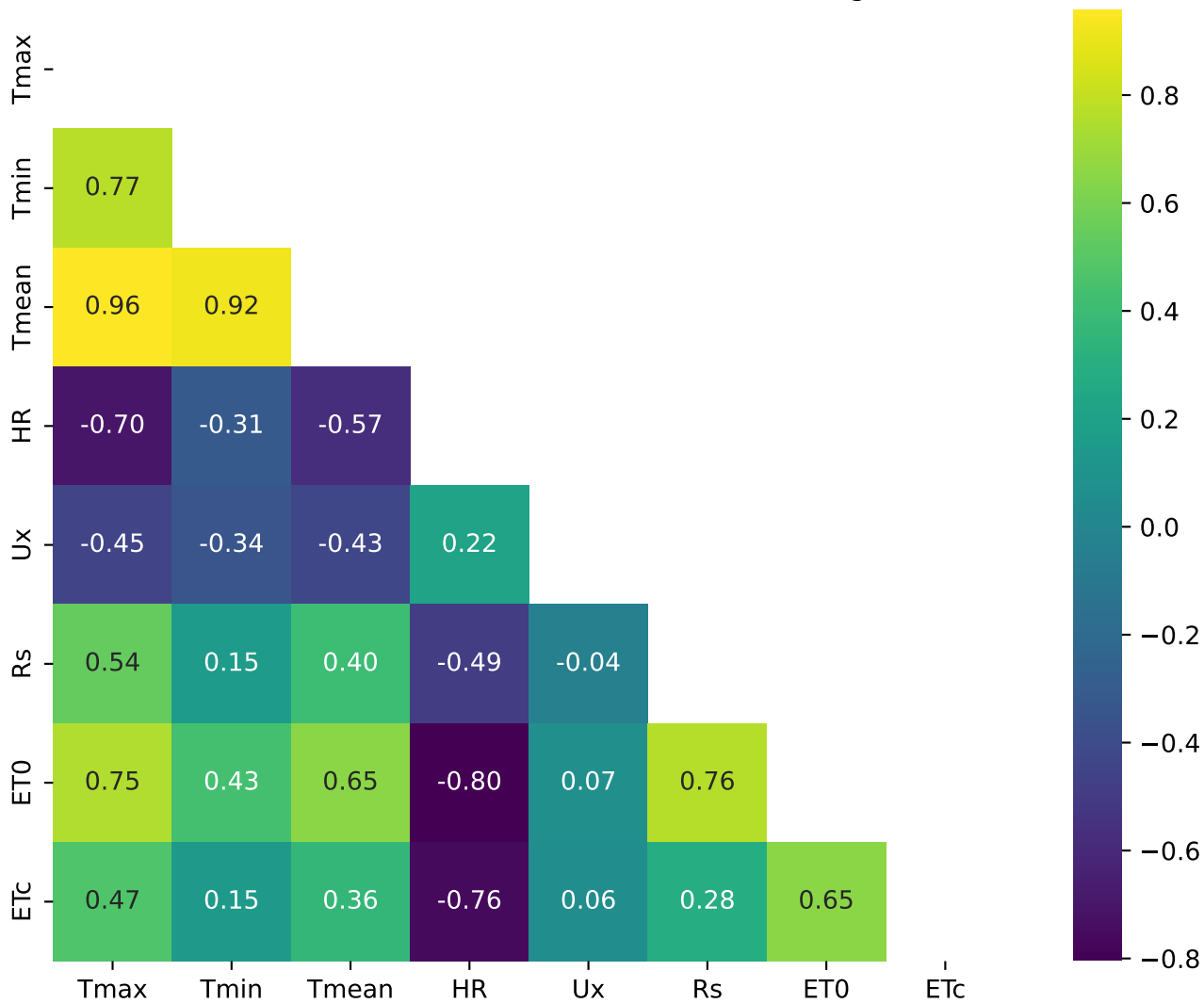
Importancias: {'Tmax': 0.14841376410540508, 'Tmin': 0.03464889726927181, 'HR': 0.32147653152161076, 'Ux': 0.030225288061306914, 'Rs': 0.46523551904240534}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 21.605676 | 11.111892 | 57.691081 | 1.571351 | 12.007838 | 2.616303 | 2.173454 |
| 1 | 20.633750 | 7.786875 | 35.992500 | 3.491875 | 16.545000 | 4.544215 | 3.706119 |
| 2 | 26.710750 | 13.275500 | 37.859750 | 1.751250 | 17.268750 | 4.221723 | 2.705608 |
| 3 | 18.437419 | 6.794194 | 59.559355 | 2.280323 | 15.711935 | 2.806194 | 2.144681 |
| 4 | 13.953158 | 8.193684 | 86.316316 | 3.088947 | 9.397368 | 1.446442 | 1.153227 |

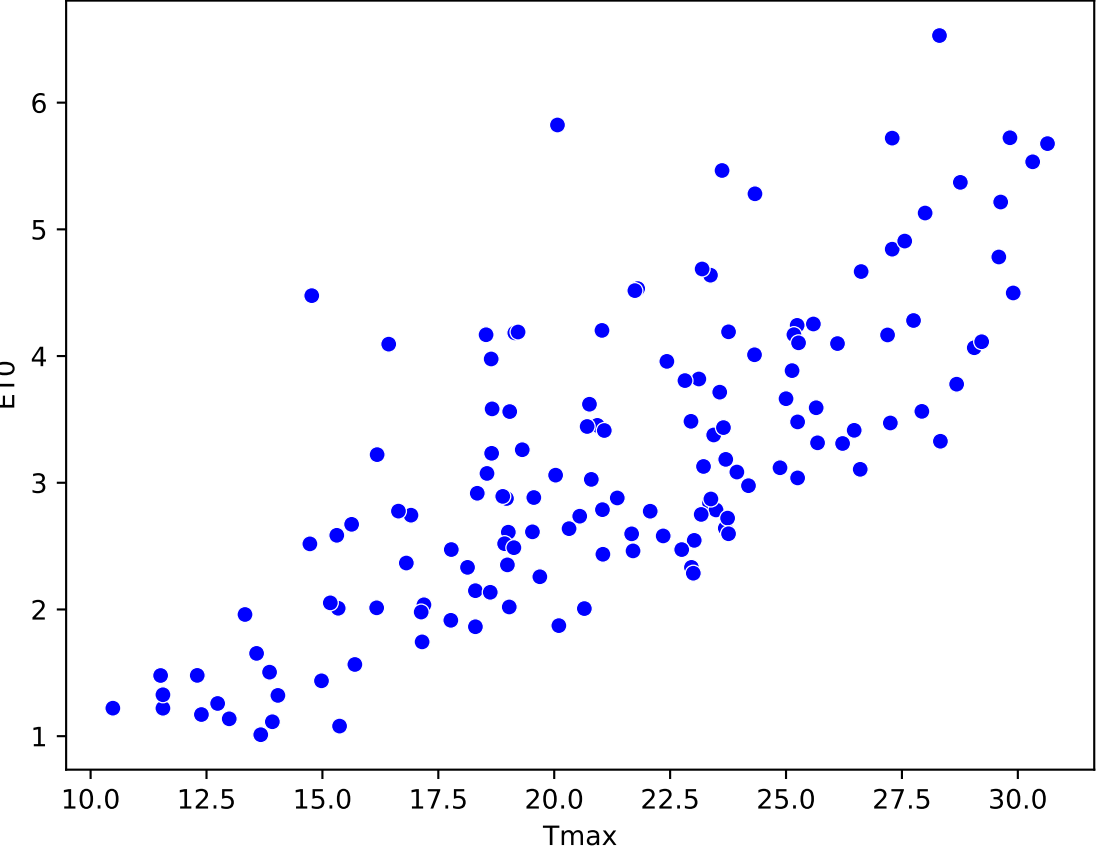
Ensenada — 2021-2022

Matriz de Correlación entre Variables Meteorológicas

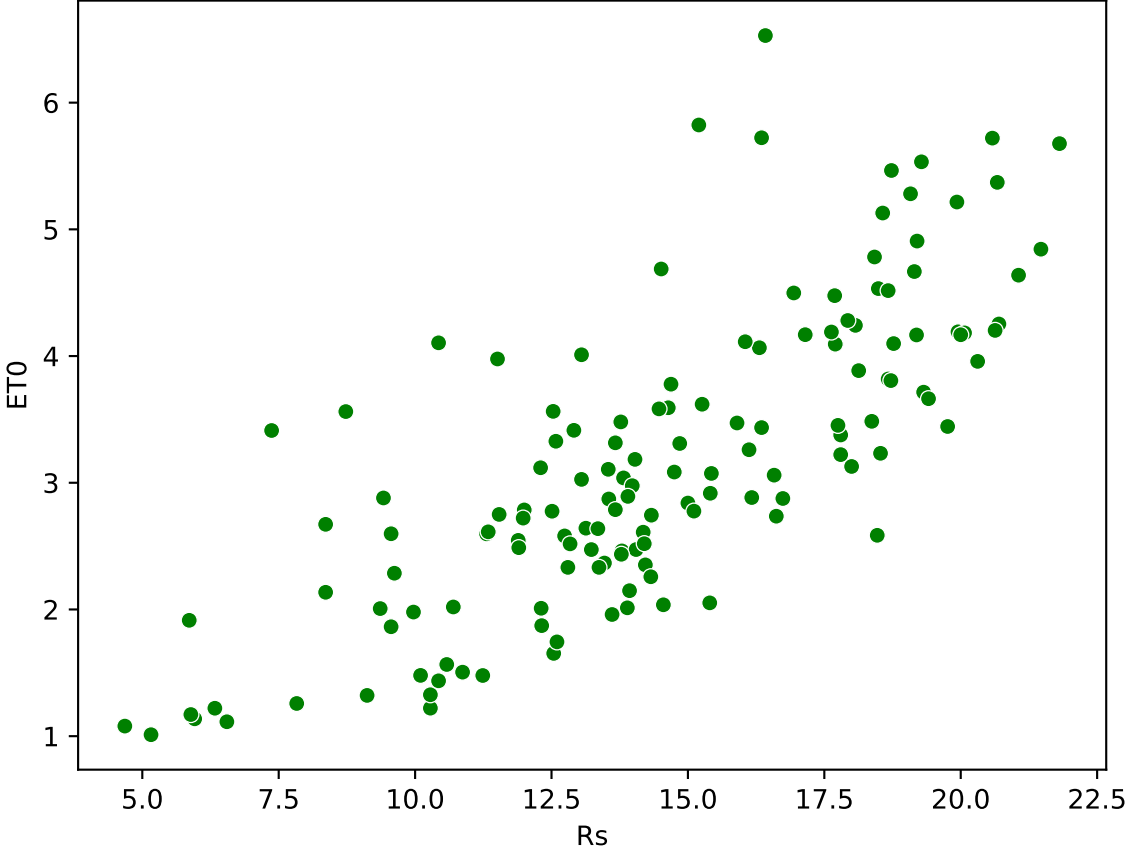


Dispersión — Ensenada (2021-2022)

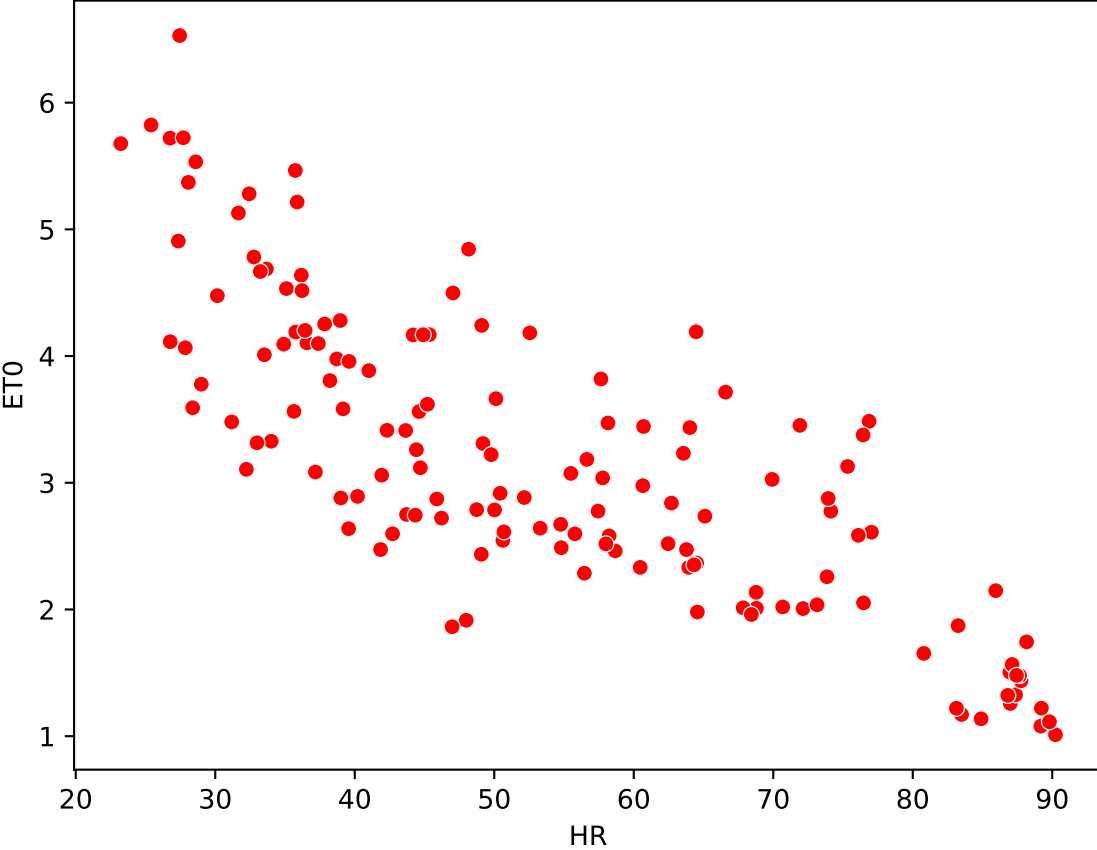
Tmax vs ET0



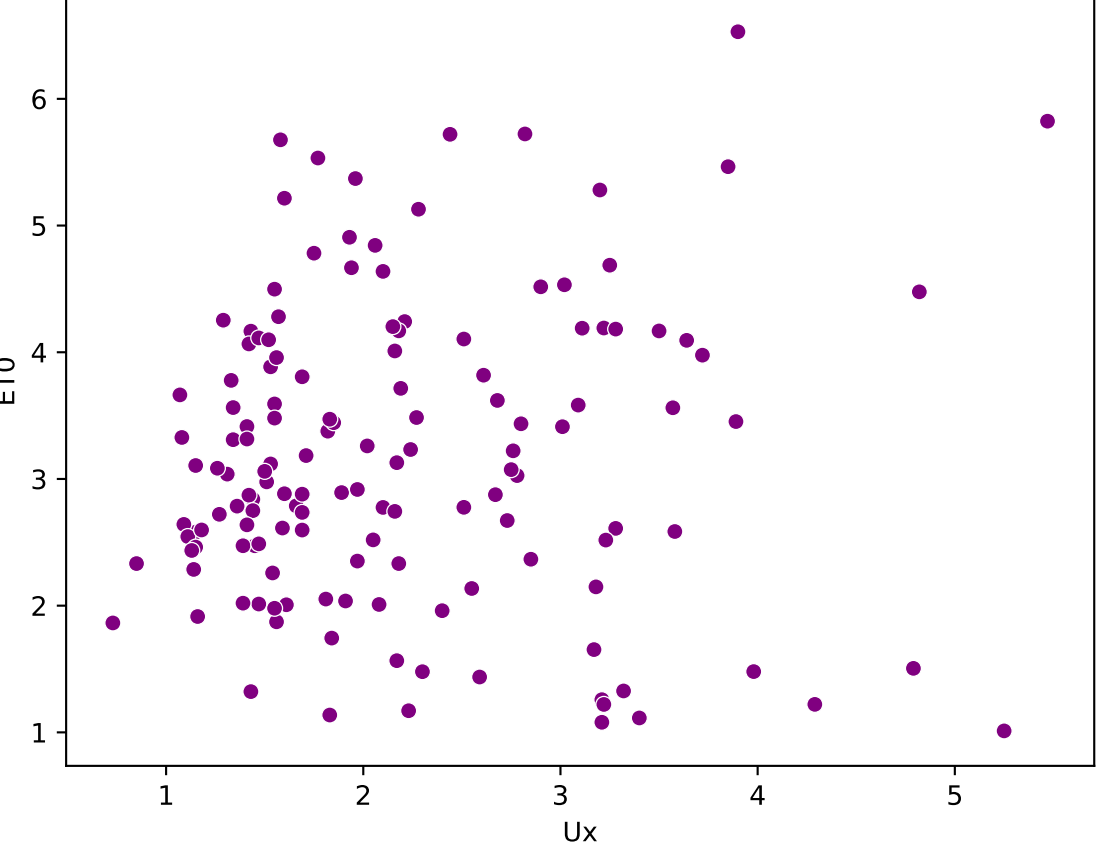
Rs vs ET0



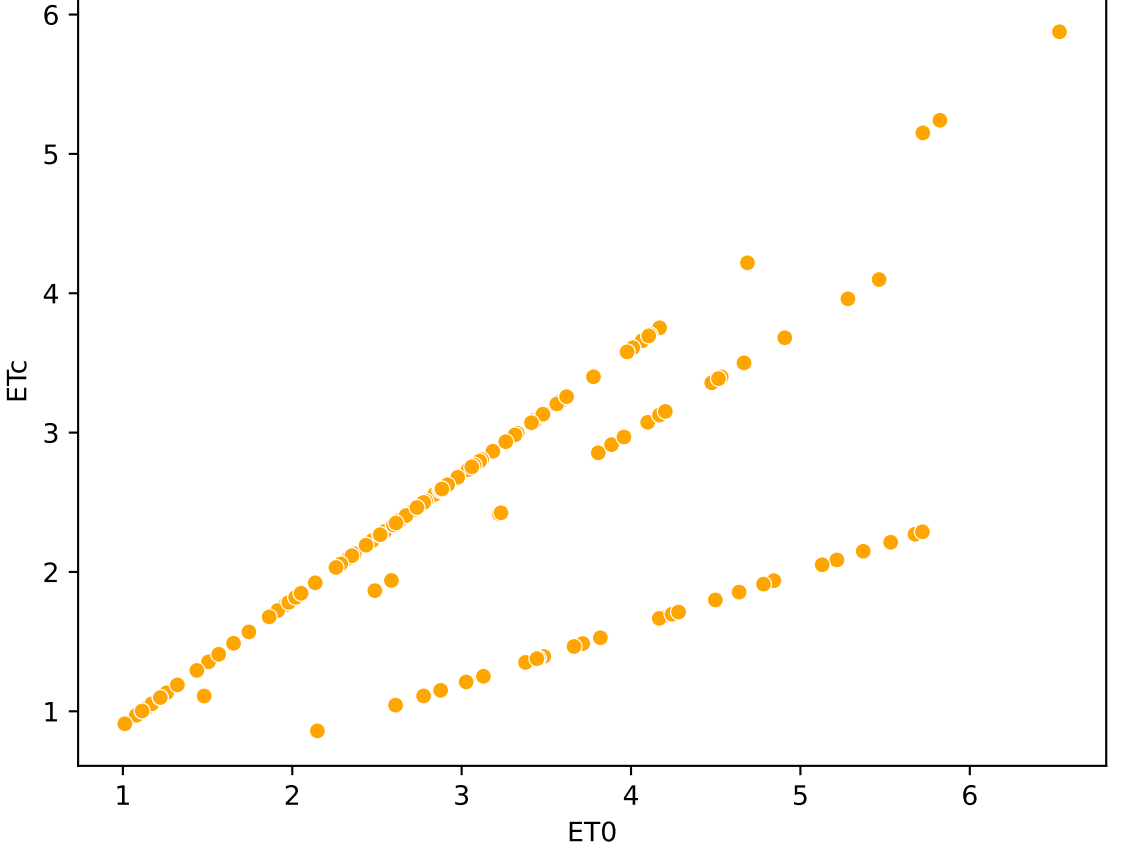
HR vs ET0



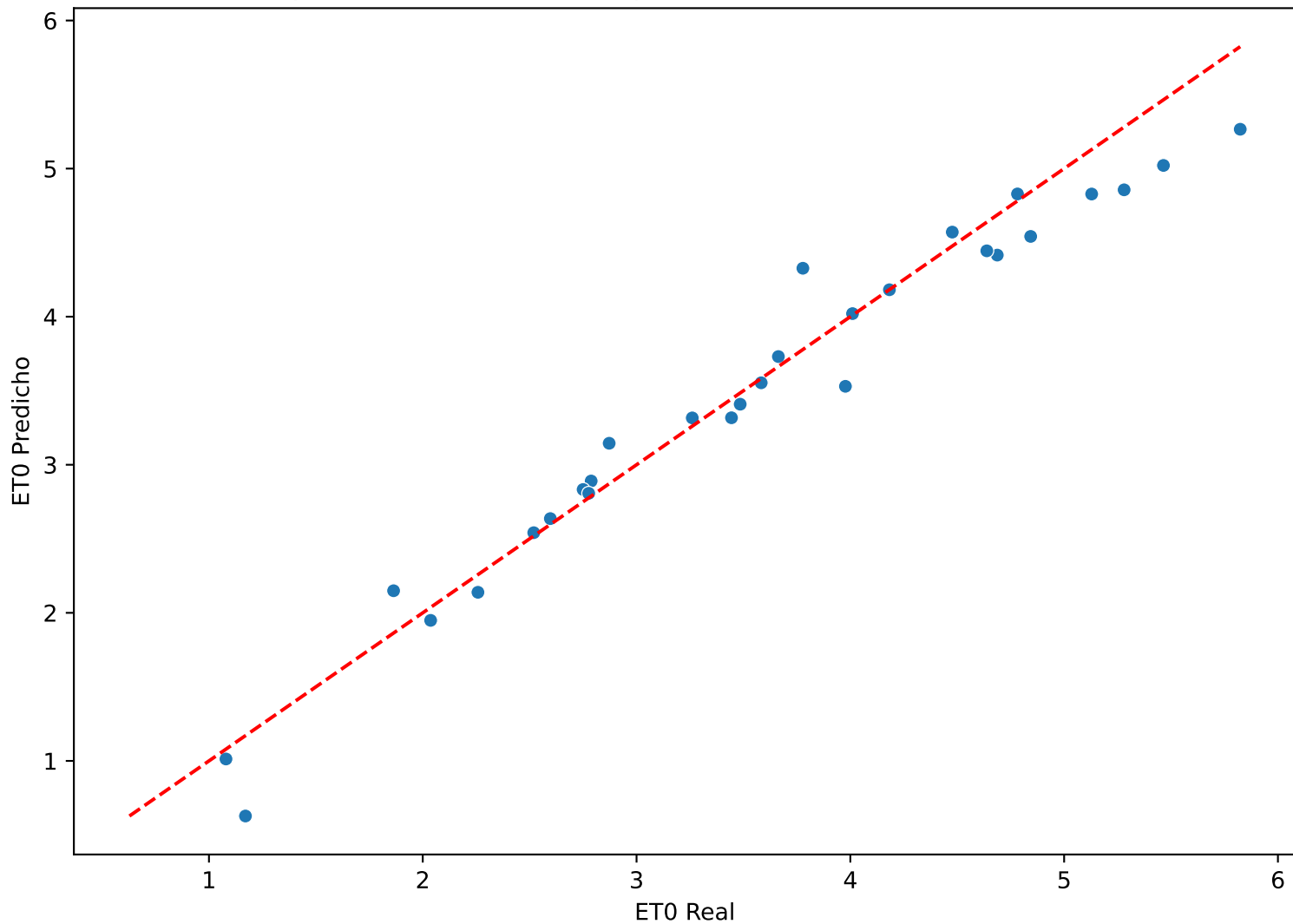
Ux vs ET0



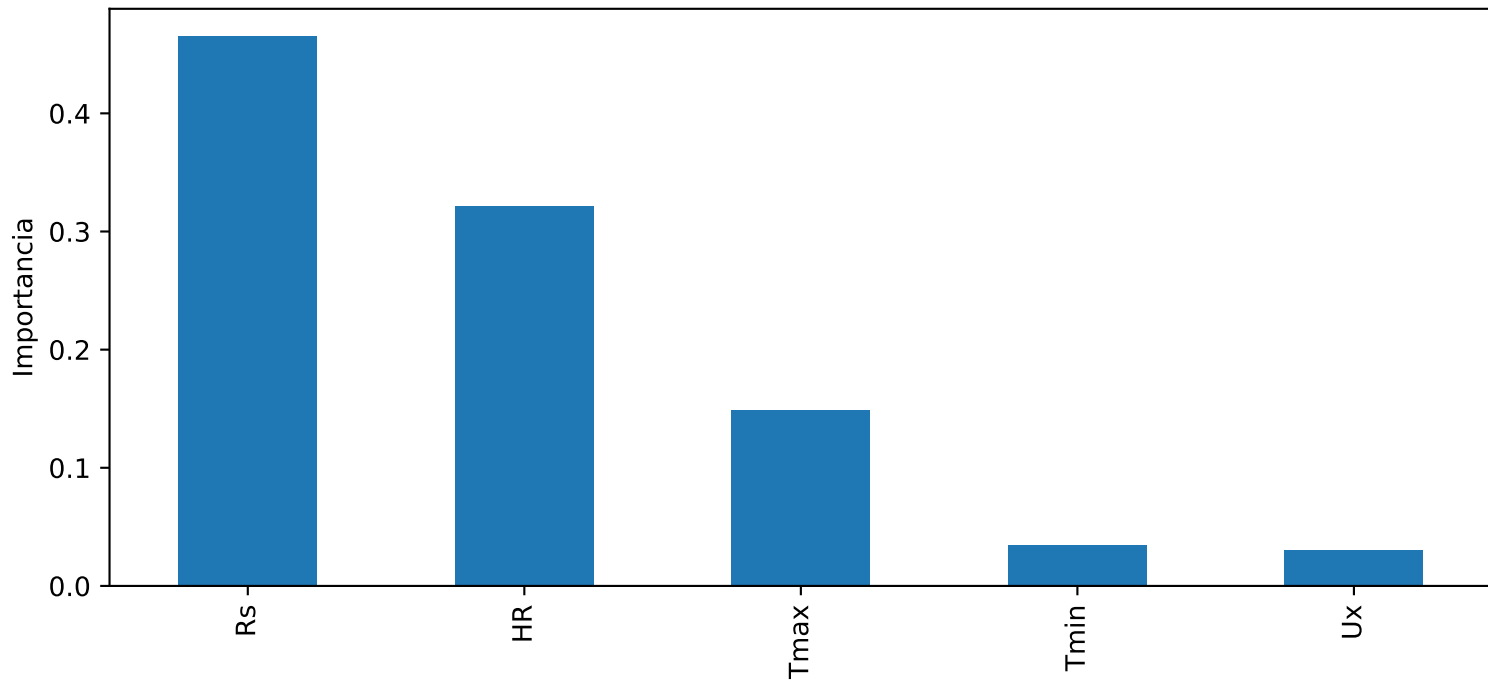
ET0 vs ETc



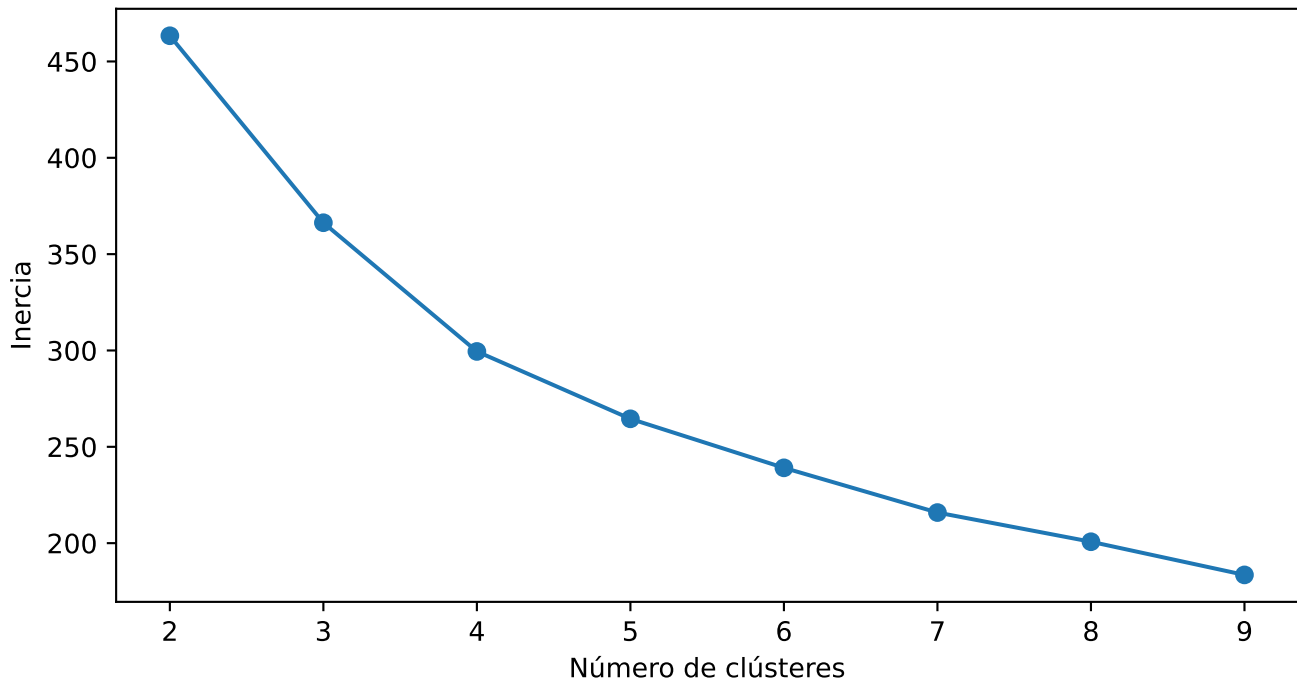
Comparación entre ET0 Real y Predicho — Ensenada (2021-2022)



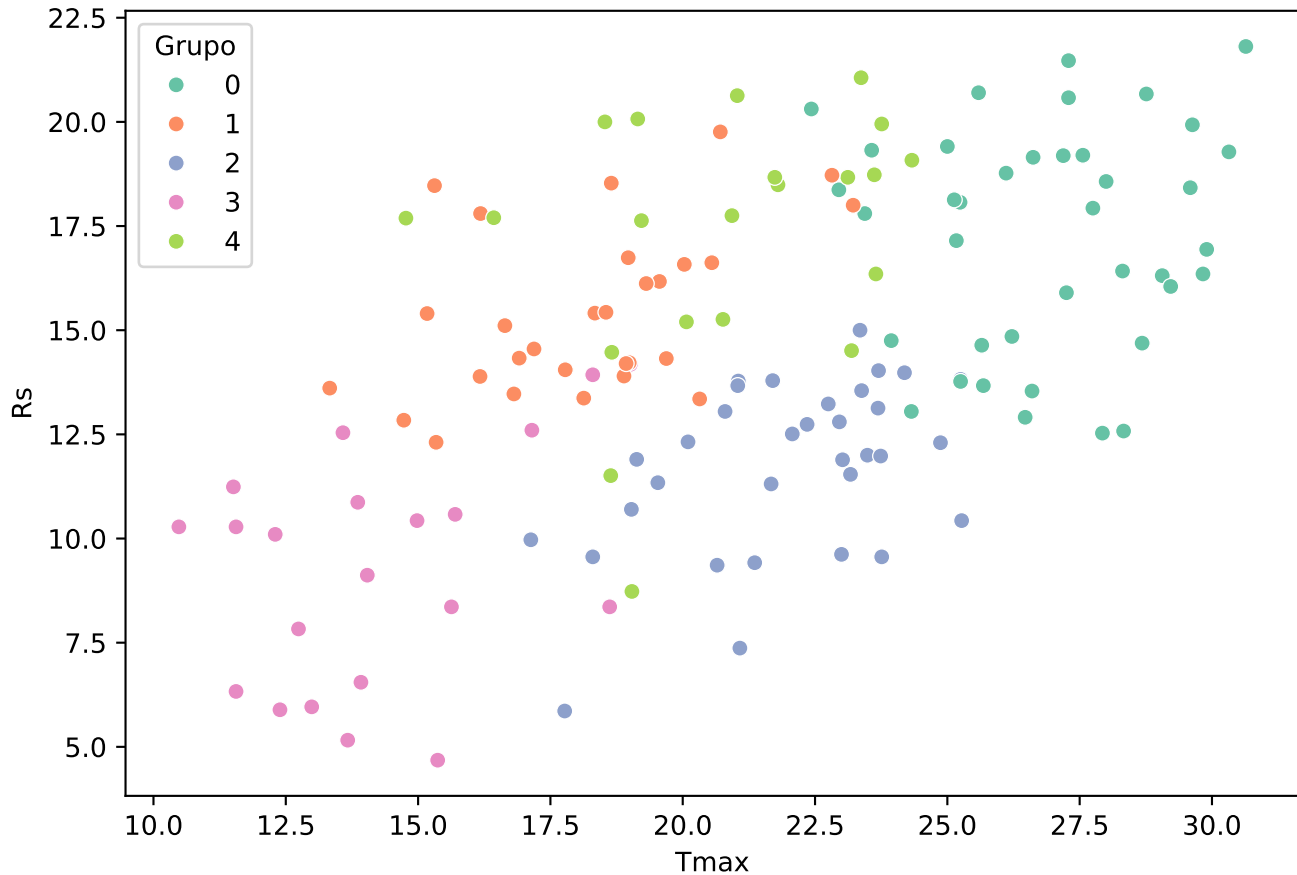
Importancia de variables (RF) — Ensenada (2021-2022)



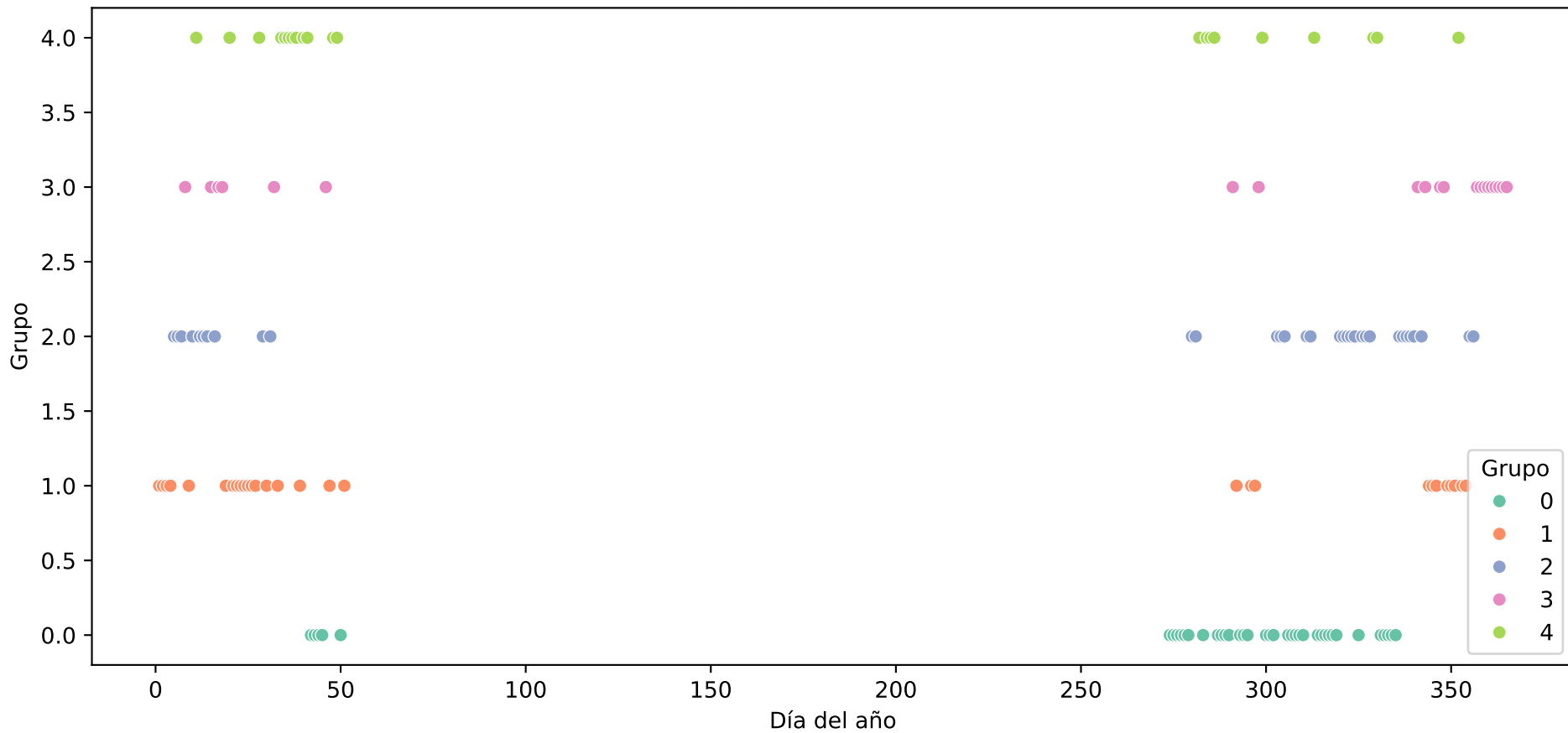
Método del codo



Clasificación de días climáticos — Ensenada (2021-2022)

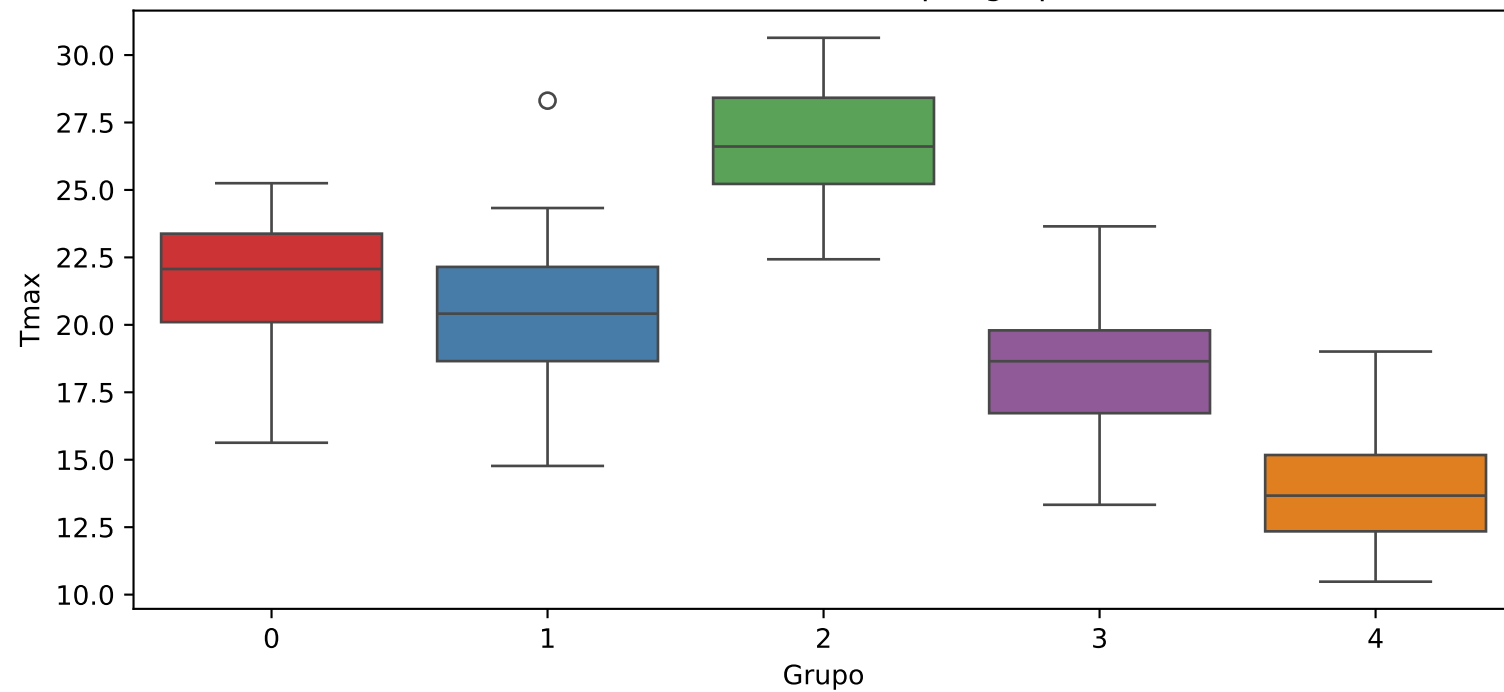


Distribución de días por grupo — Ensenada (2021-2022)

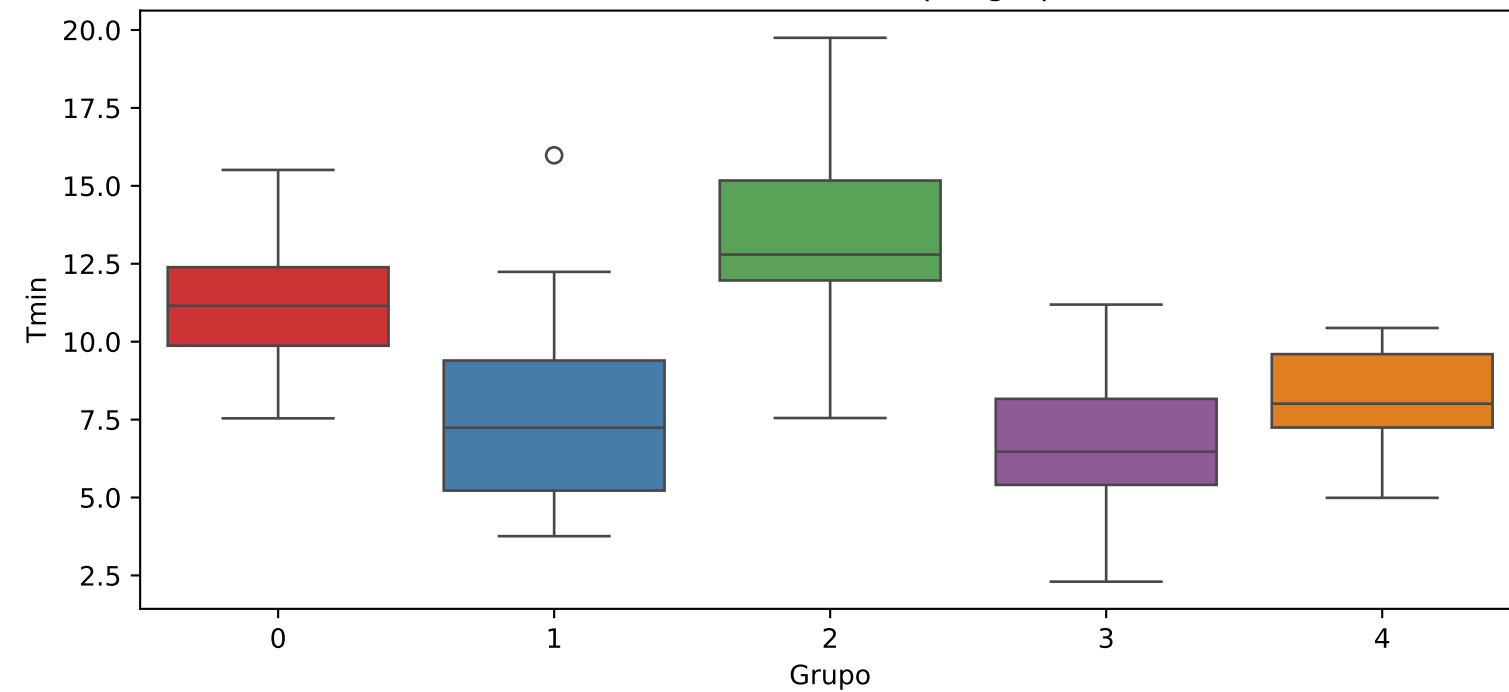


Boxplots por grupo — Ensenada (2021-2022)

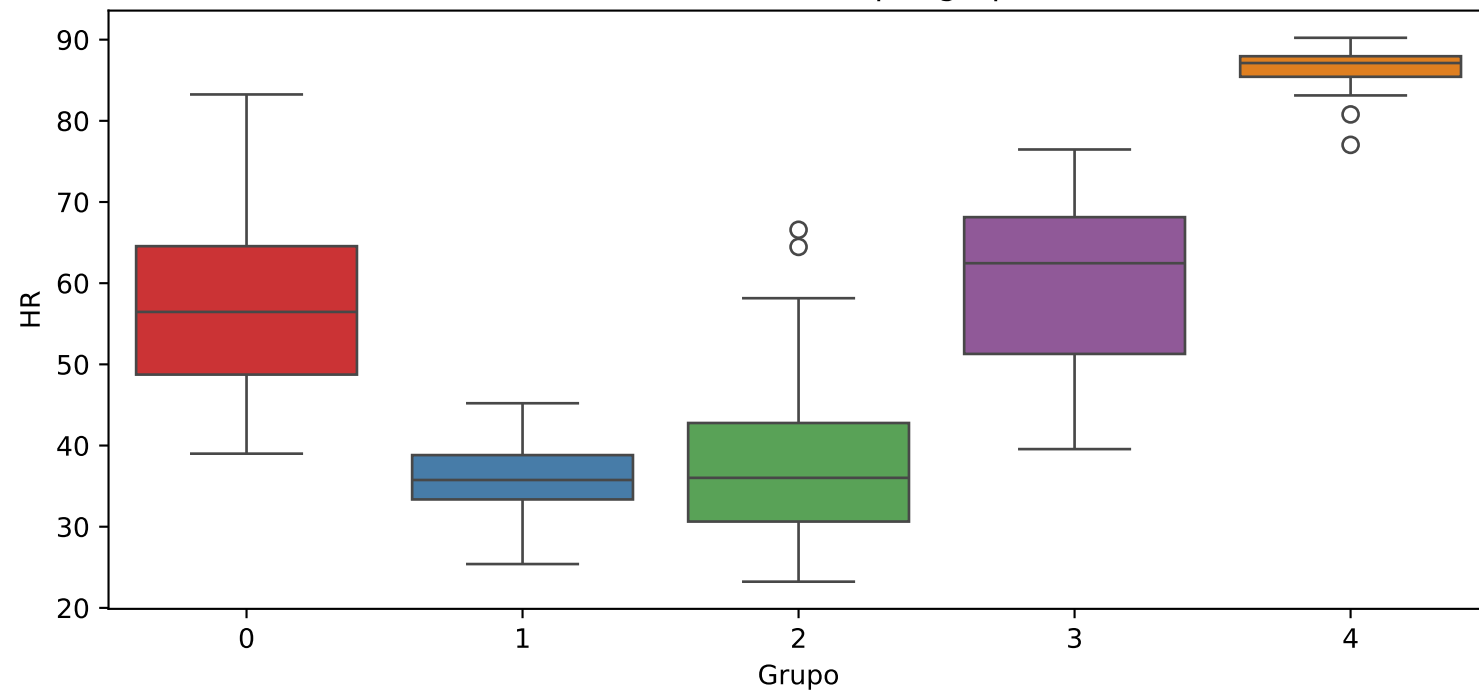
Distribución de Tmax por grupo



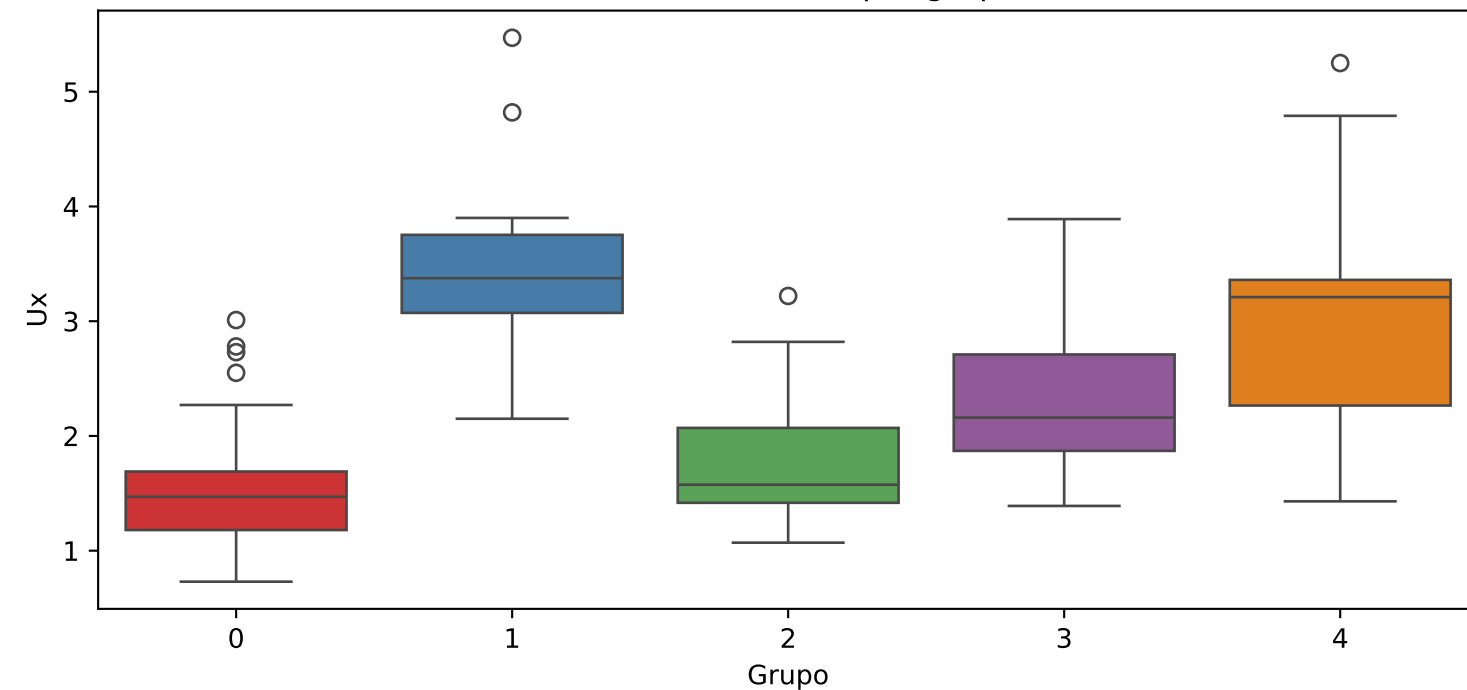
Distribución de Tmin por grupo



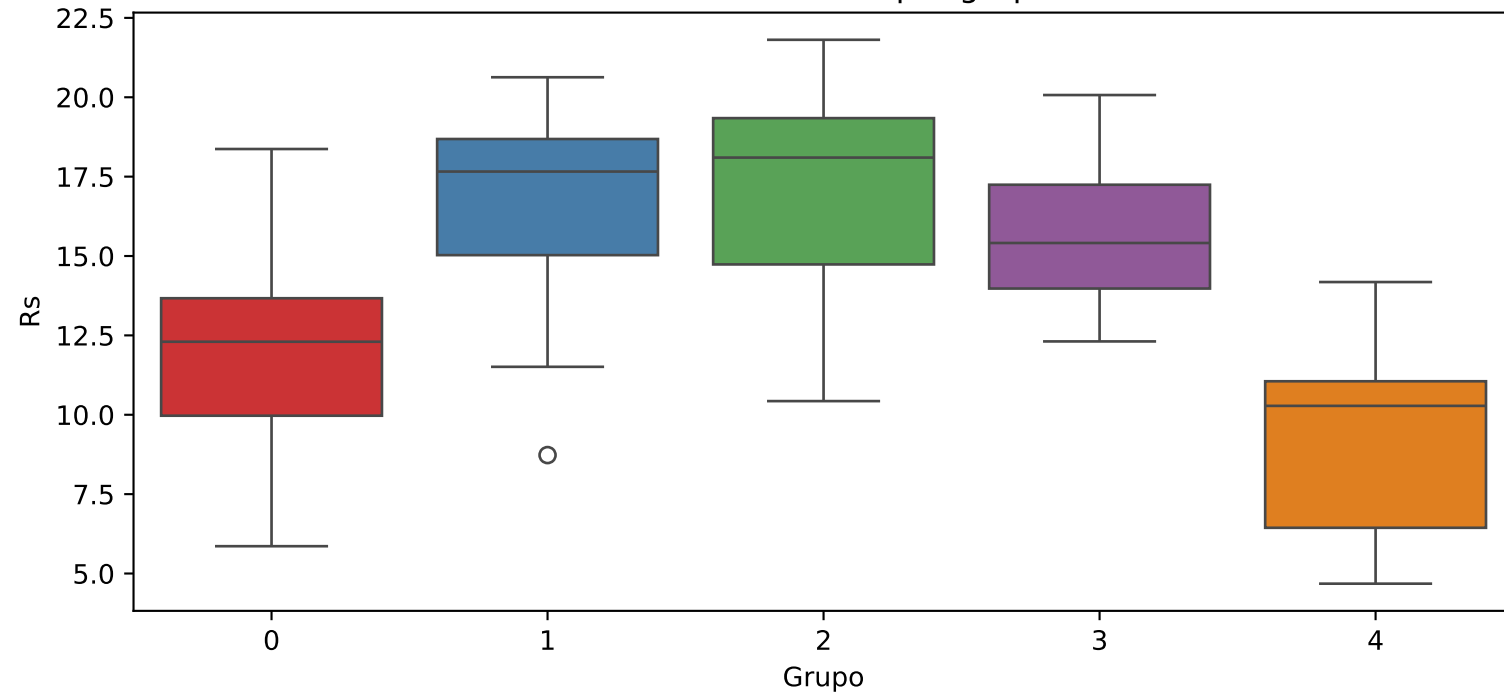
Distribución de HR por grupo



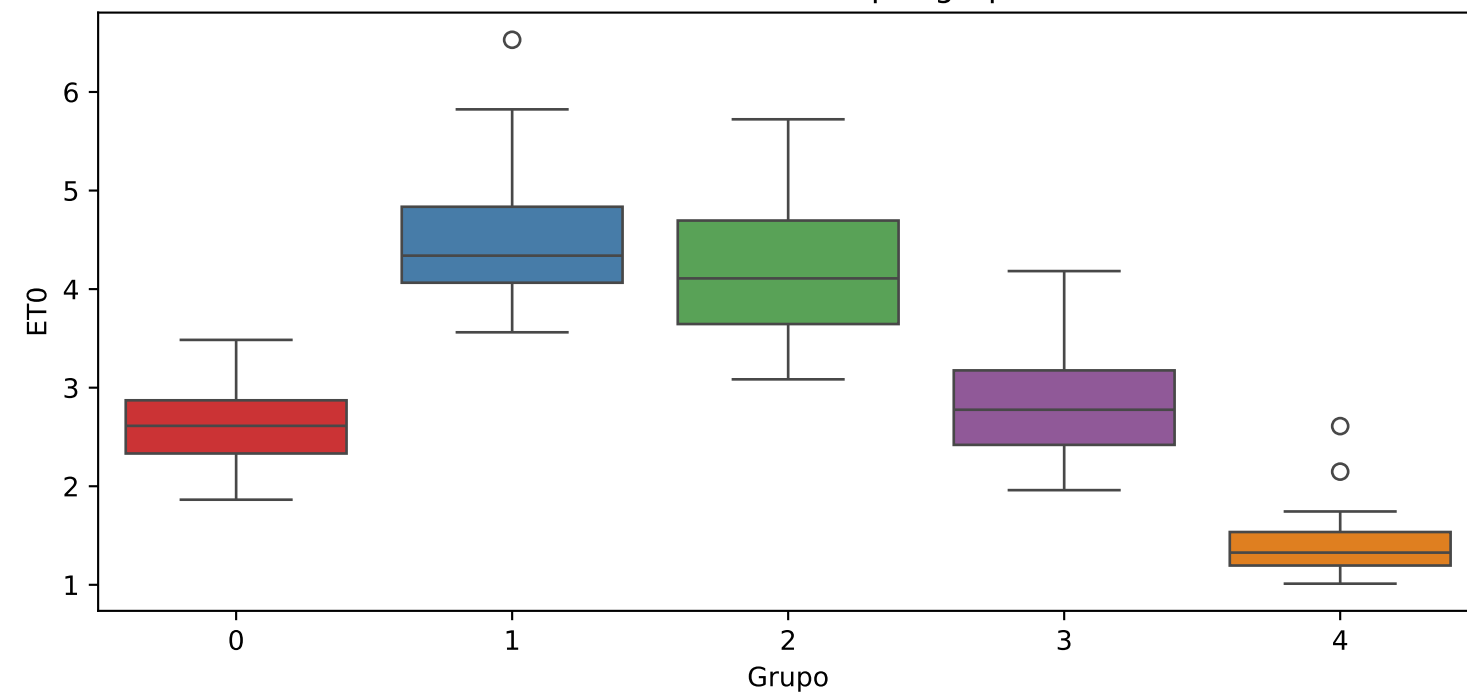
Distribución de Ux por grupo



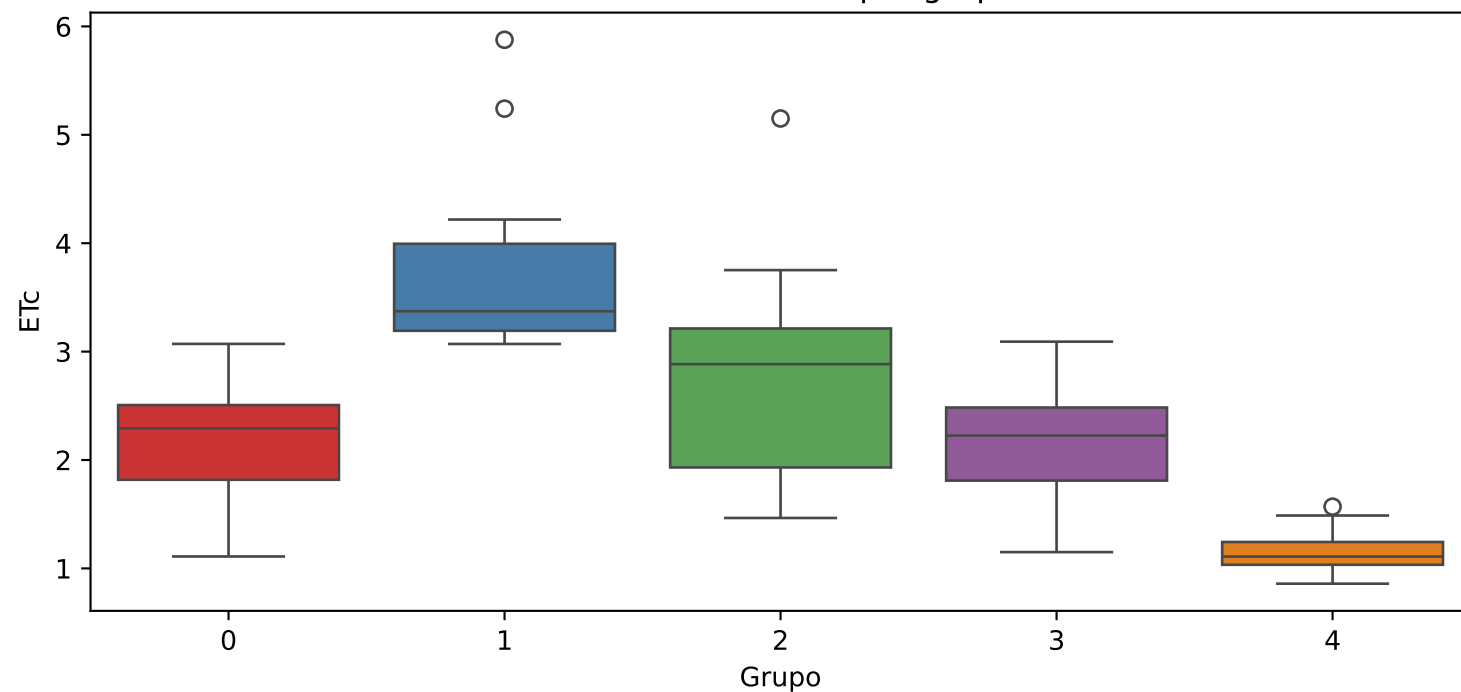
Distribución de Rs por grupo



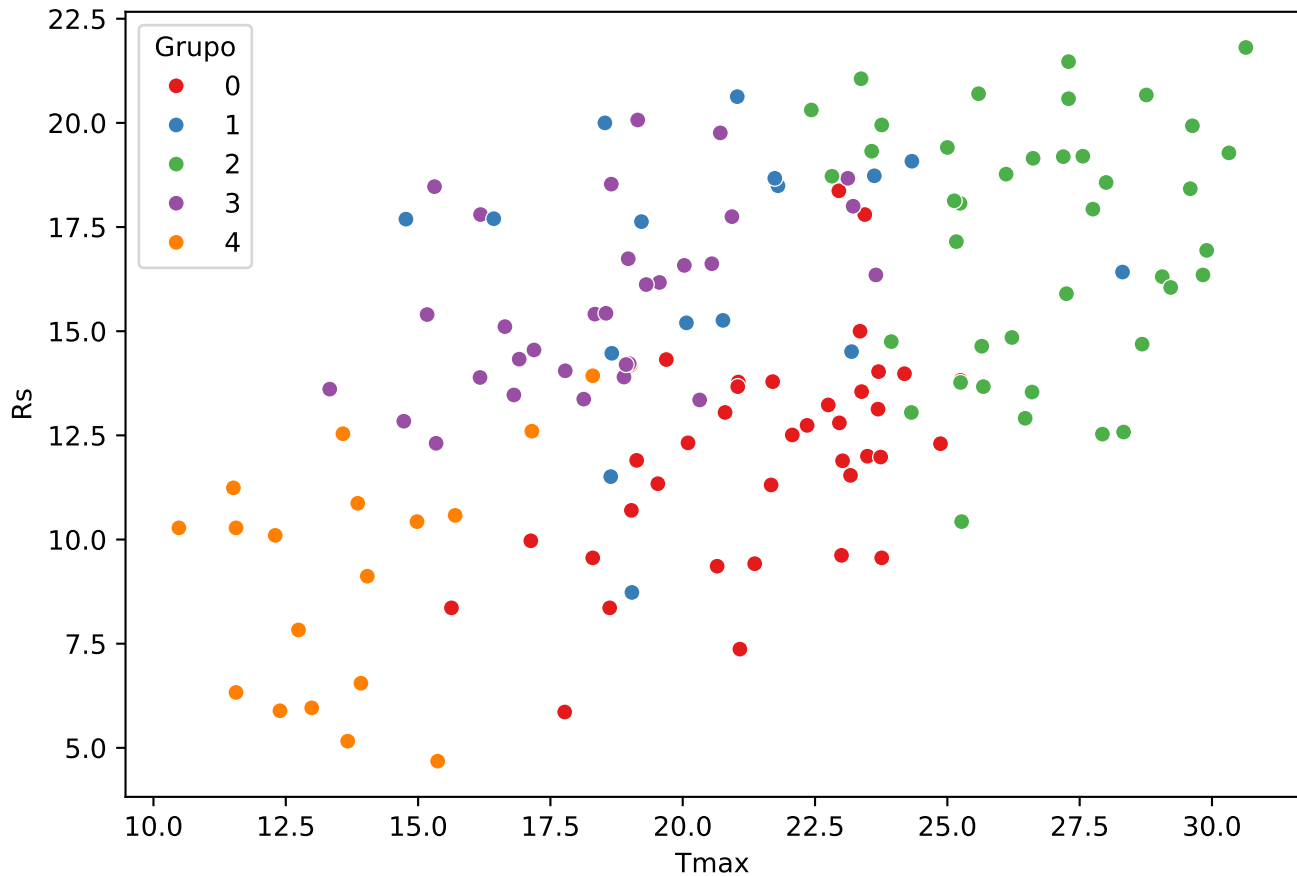
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2021-2022)



Ensenada — 2022-2023

Días del ciclo: 143

ETc total [mm]: 296.2

ETverde total [mm]: 31.5

ETazul total [mm]: 264.6

Tmax / Tmin [°C]: 31.1 / 1.4

Ensenada — 2022-2023 · Resultados y métricas

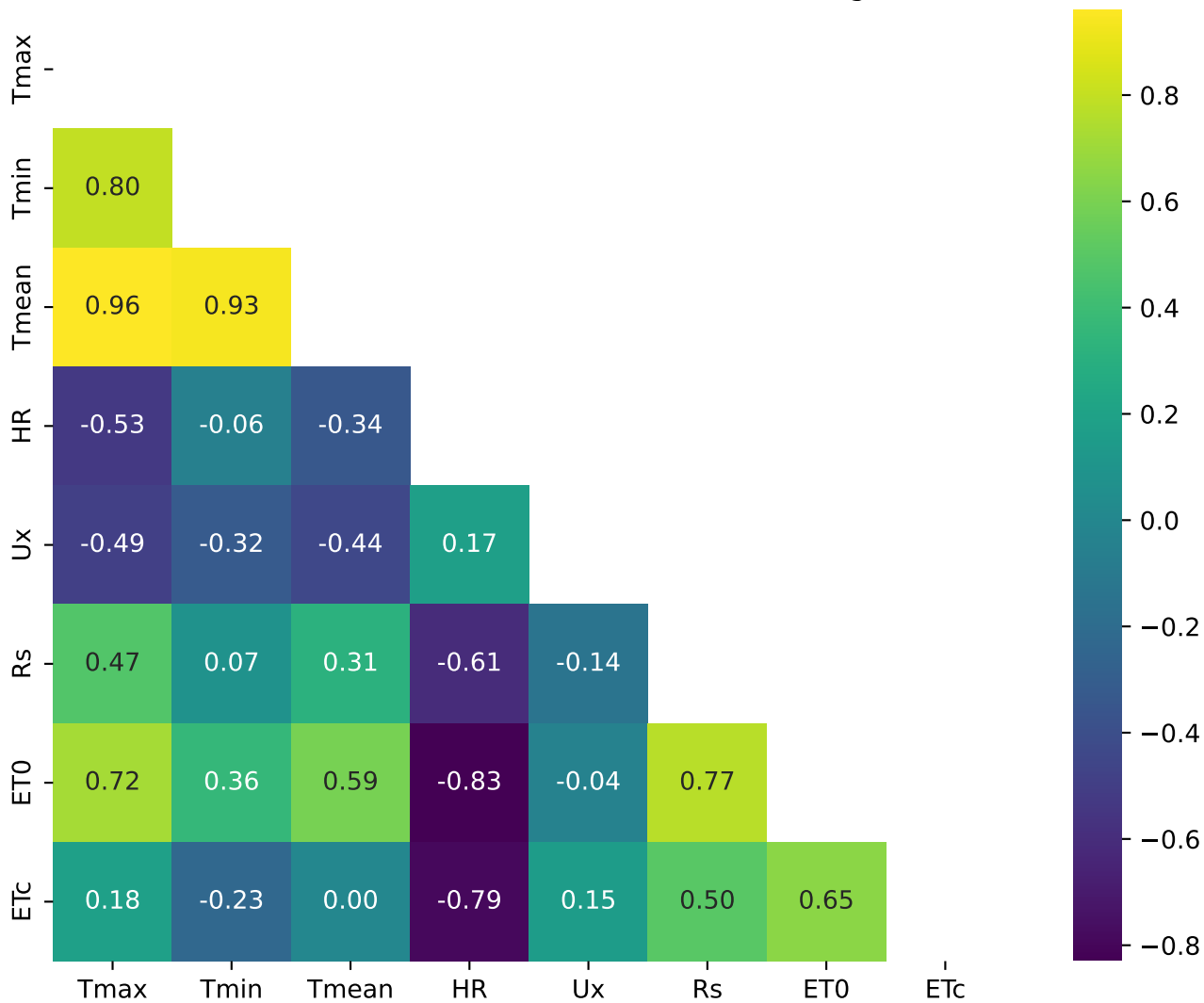
[Ensenada 2022-2023] Regresión Lineal ET0 — R²: 0.9565 MSE: 0.0556
[Ensenada 2022-2023] Random Forest ET0 — R²: 0.9077 MSE: 0.1179
Importancias: {'Tmax': 0.2386949230518348, 'Tmin': 0.02253921903704865, 'HR': 0.4808111695519329, 'Ux': 0.07393356327055924, 'Rs': 0.18402112508862448}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 16.595000 | 7.230455 | 72.652045 | 2.136818 | 13.305000 | 2.112613 | 1.766174 |
| 1 | 21.920556 | 8.925556 | 35.998889 | 3.052222 | 16.307222 | 4.317097 | 3.546753 |
| 2 | 27.575417 | 15.575000 | 57.175417 | 1.507083 | 15.962500 | 3.719093 | 1.487637 |
| 3 | 12.909500 | 7.911500 | 87.510500 | 3.413000 | 8.405500 | 1.286282 | 1.137007 |
| 4 | 19.169189 | 6.710000 | 46.916757 | 2.042703 | 15.555135 | 3.048751 | 2.599405 |

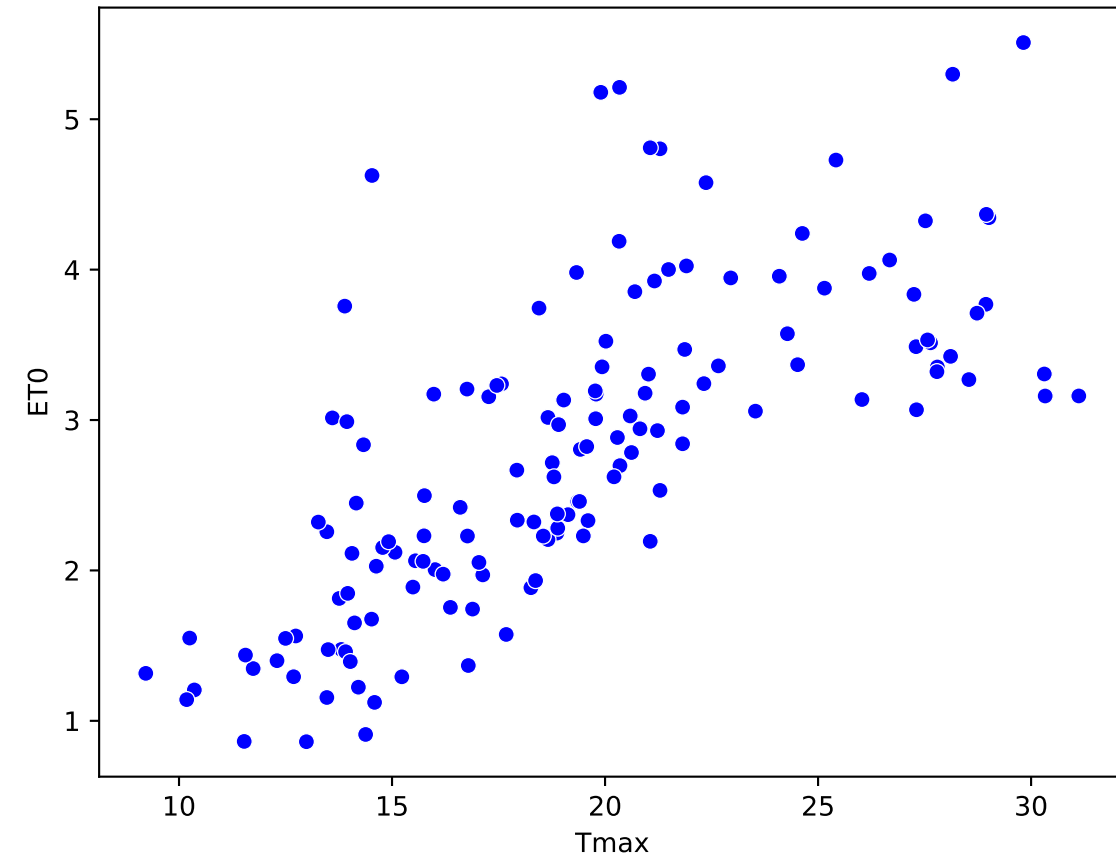
Ensenada — 2022-2023

Matriz de Correlación entre Variables Meteorológicas

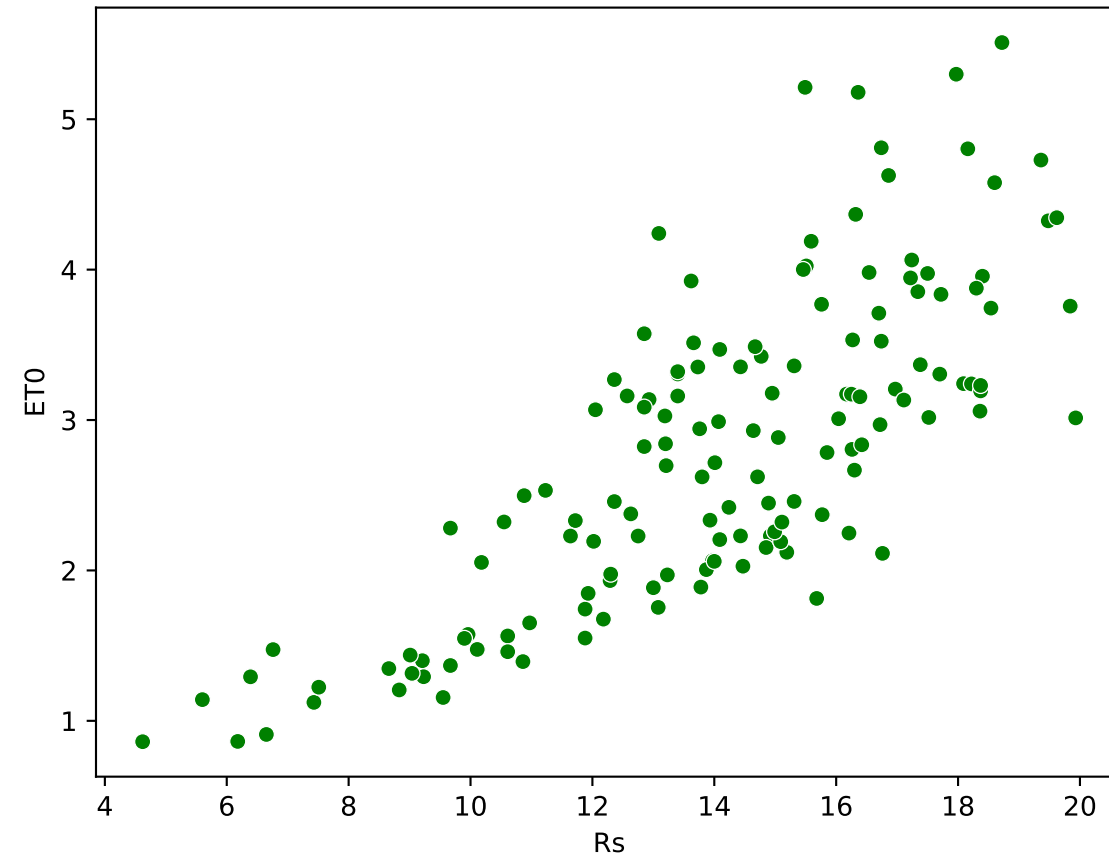


Dispersión — Ensenada (2022-2023)

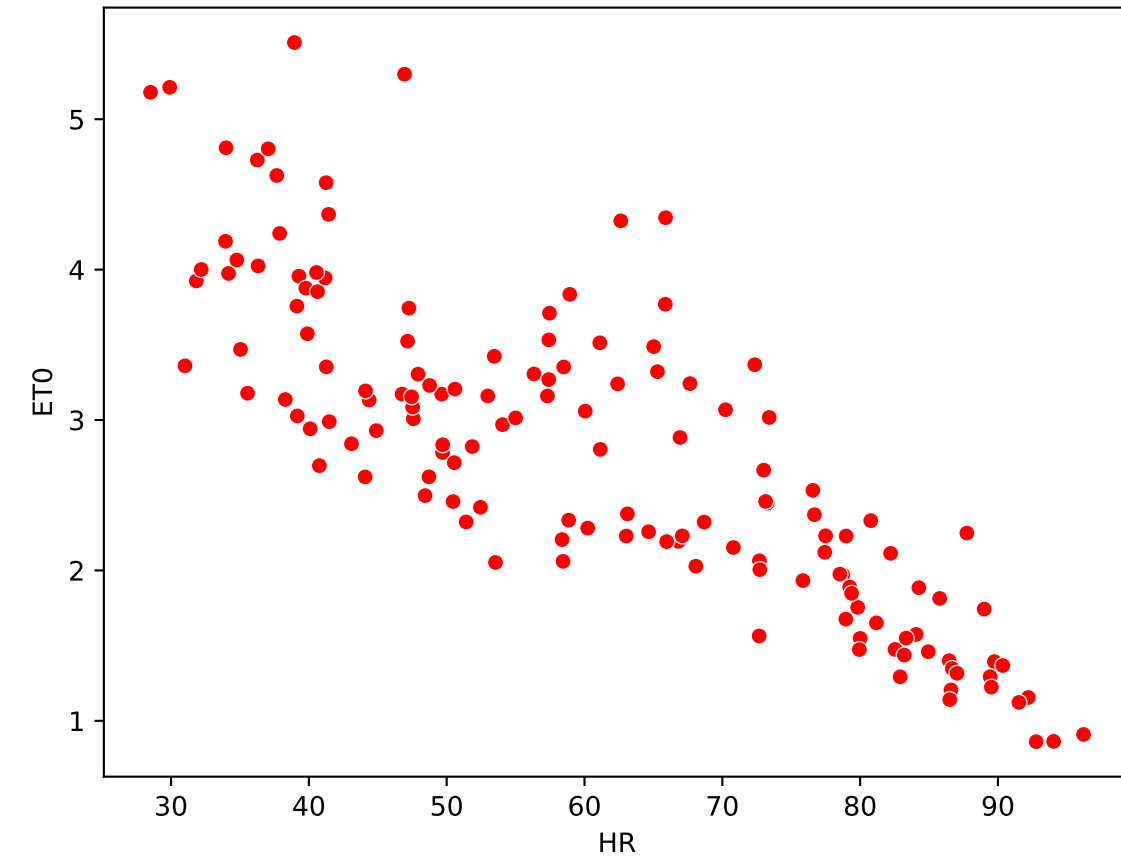
Tmax vs ET0



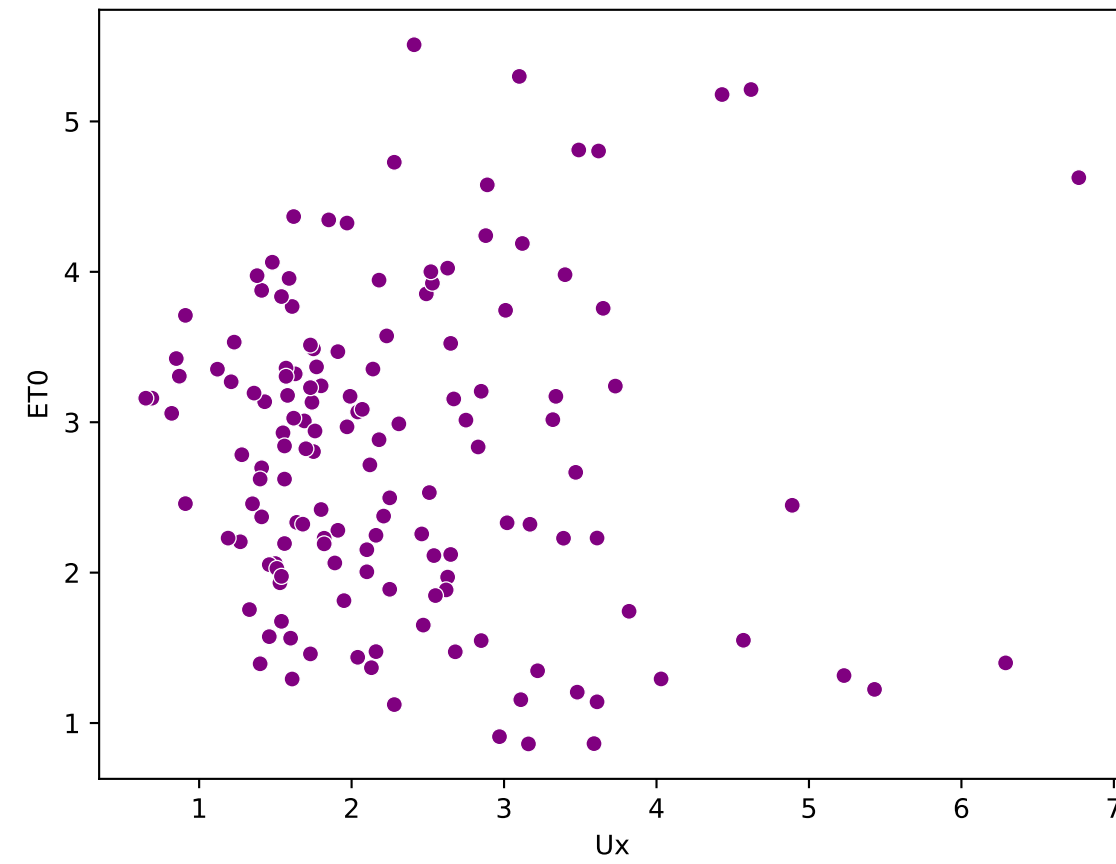
Rs vs ET0



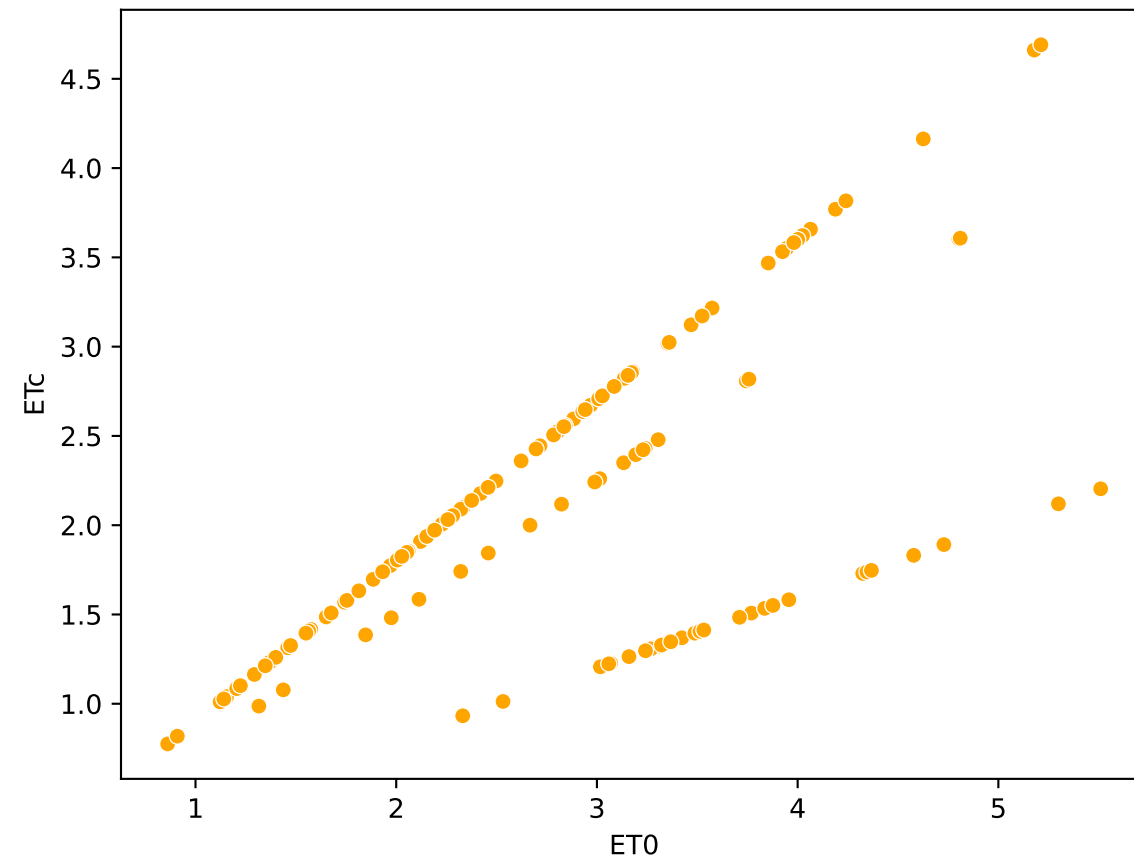
HR vs ET0



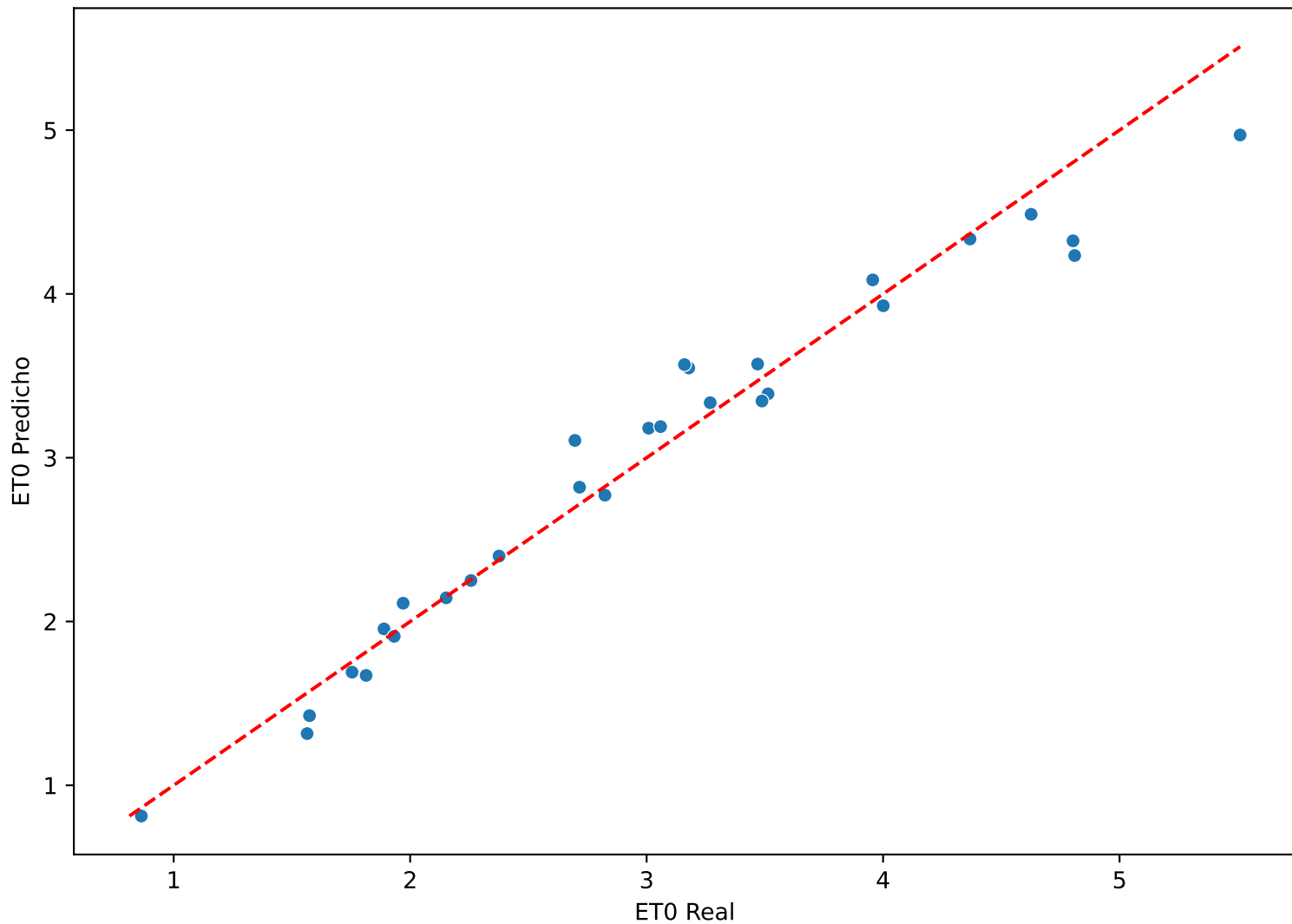
Ux vs ET0



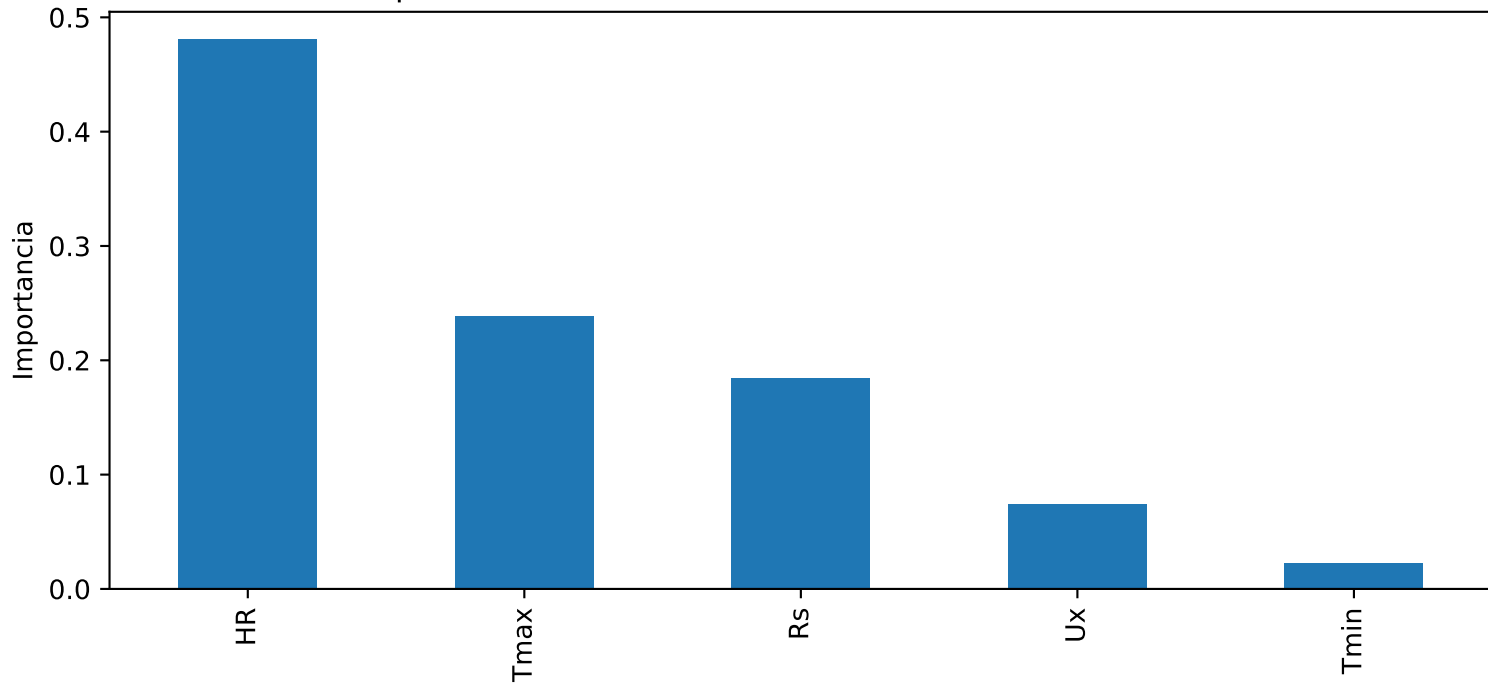
ET0 vs ETc



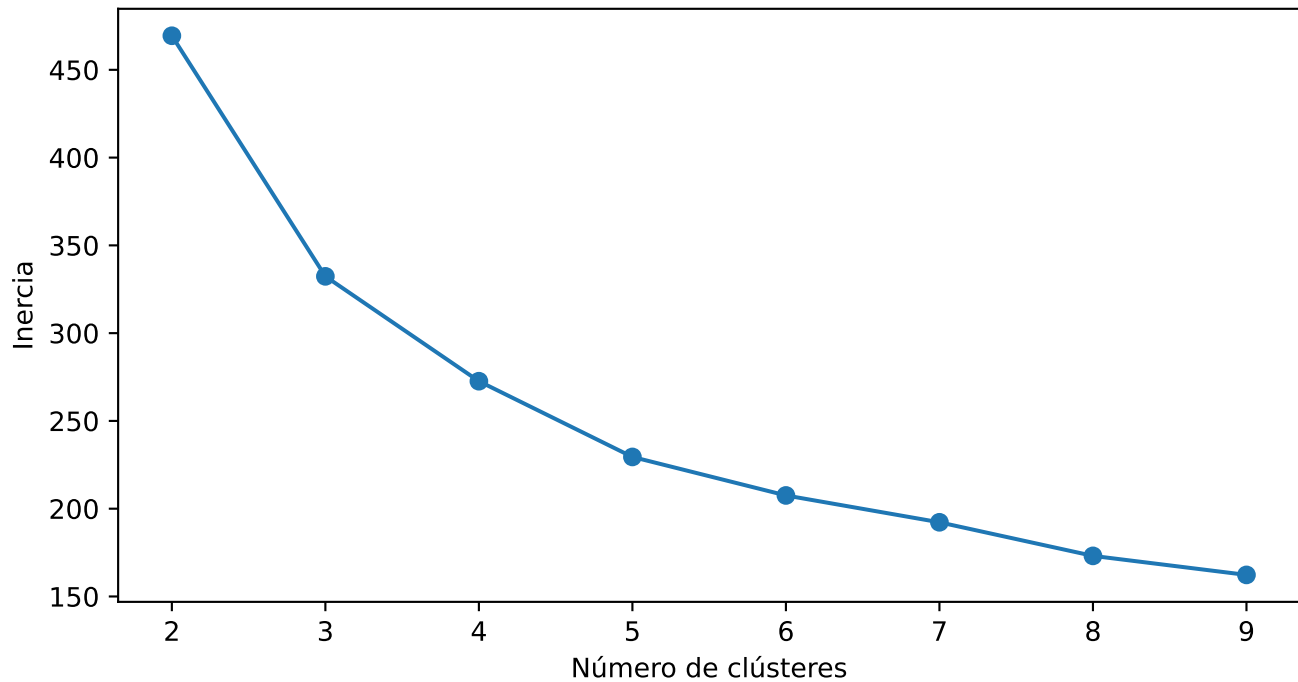
Comparación entre ET0 Real y Predicho — Ensenada (2022-2023)



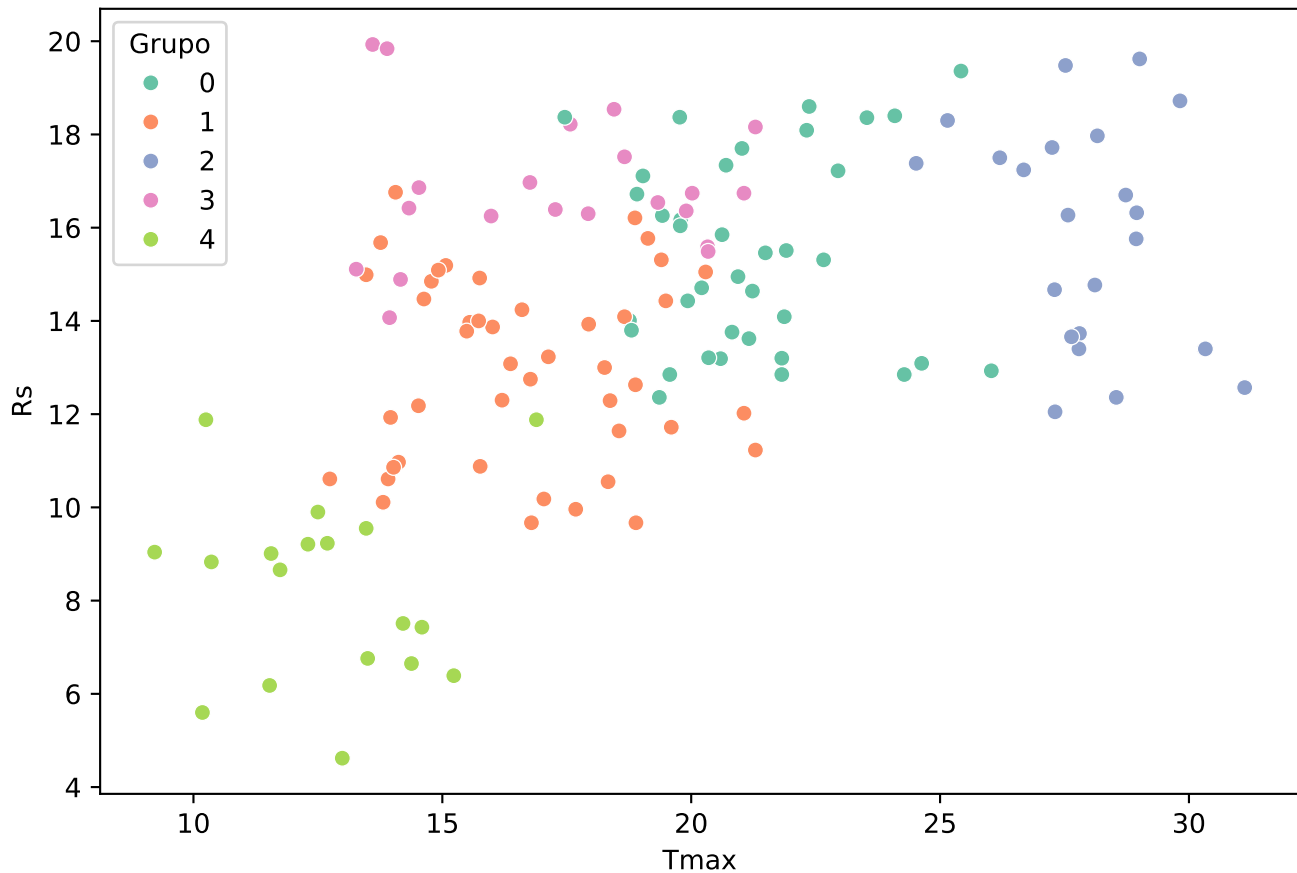
Importancia de variables (RF) — Ensenada (2022-2023)



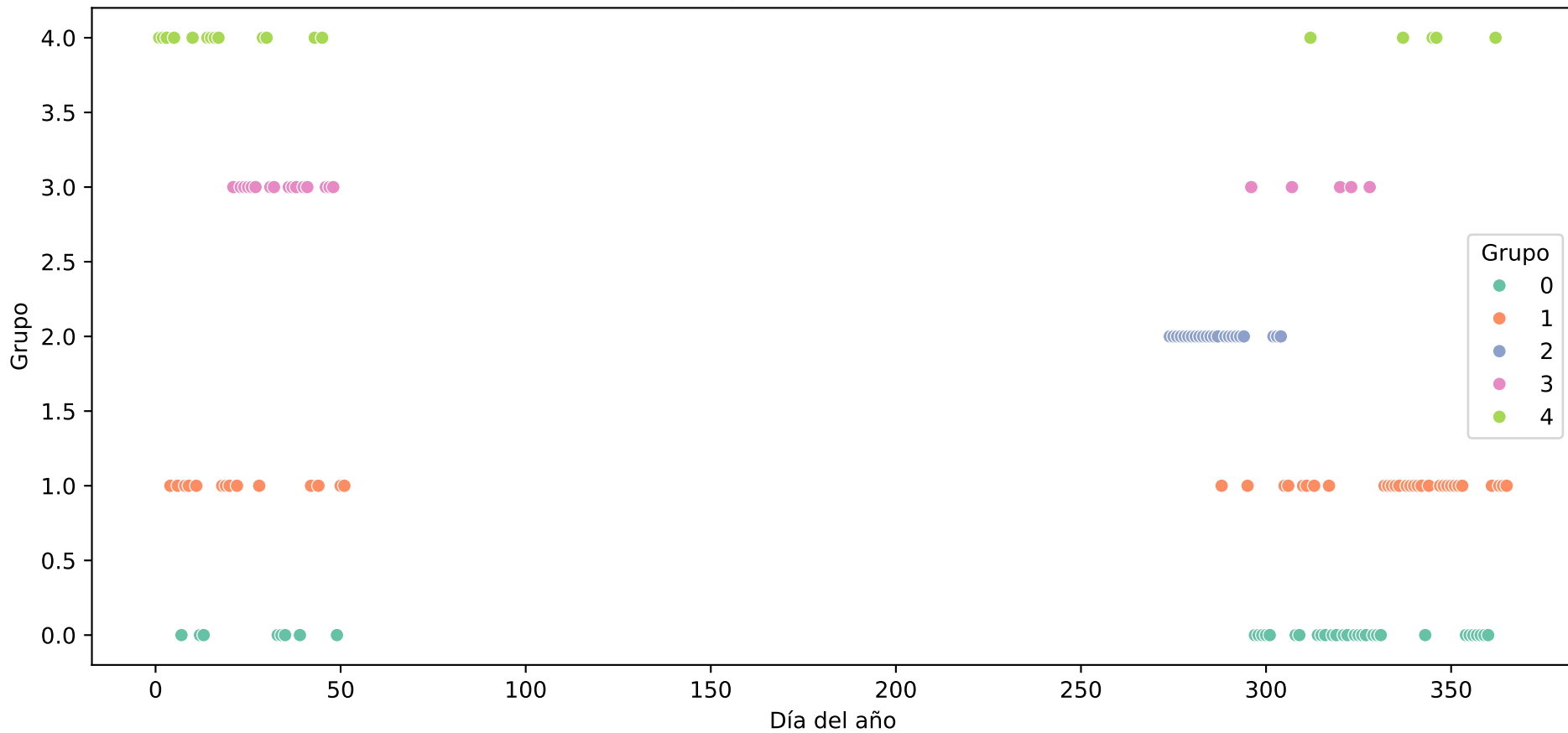
Método del codo



Clasificación de días climáticos — Ensenada (2022-2023)

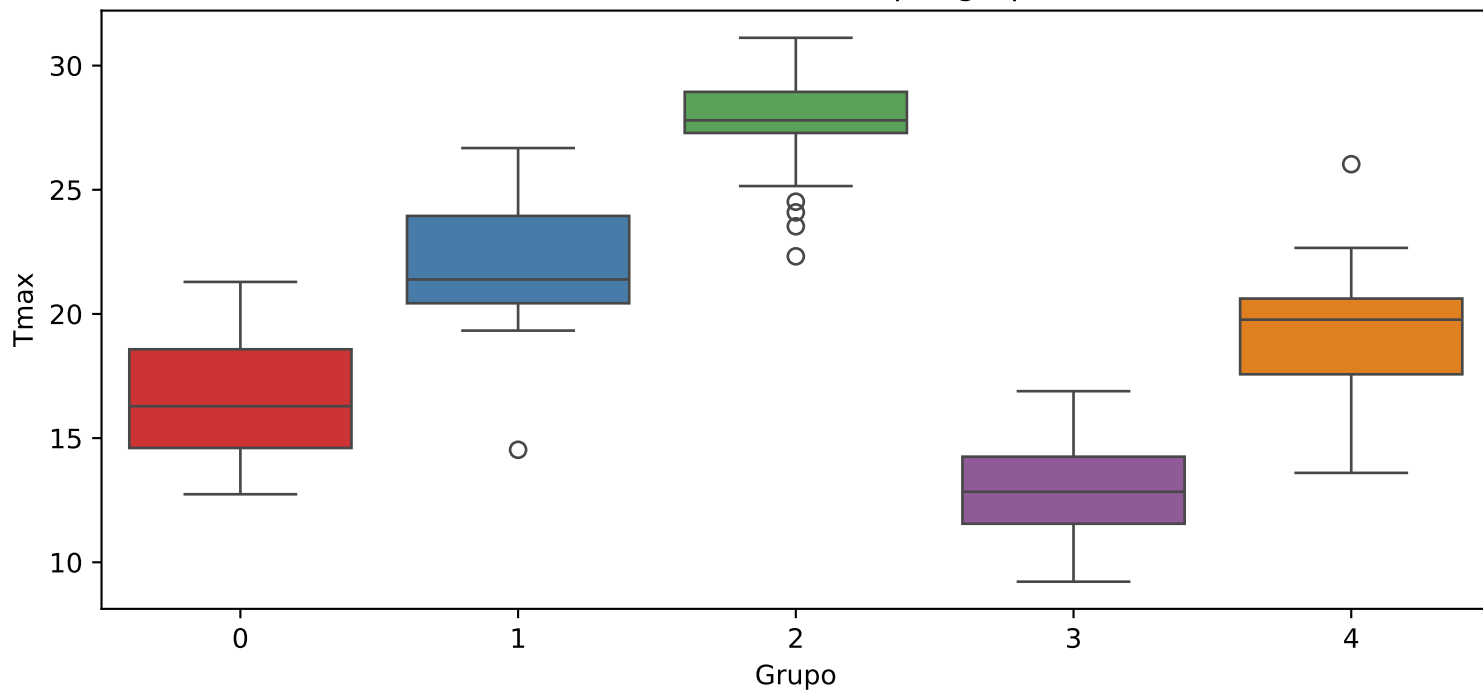


Distribución de días por grupo — Ensenada (2022-2023)

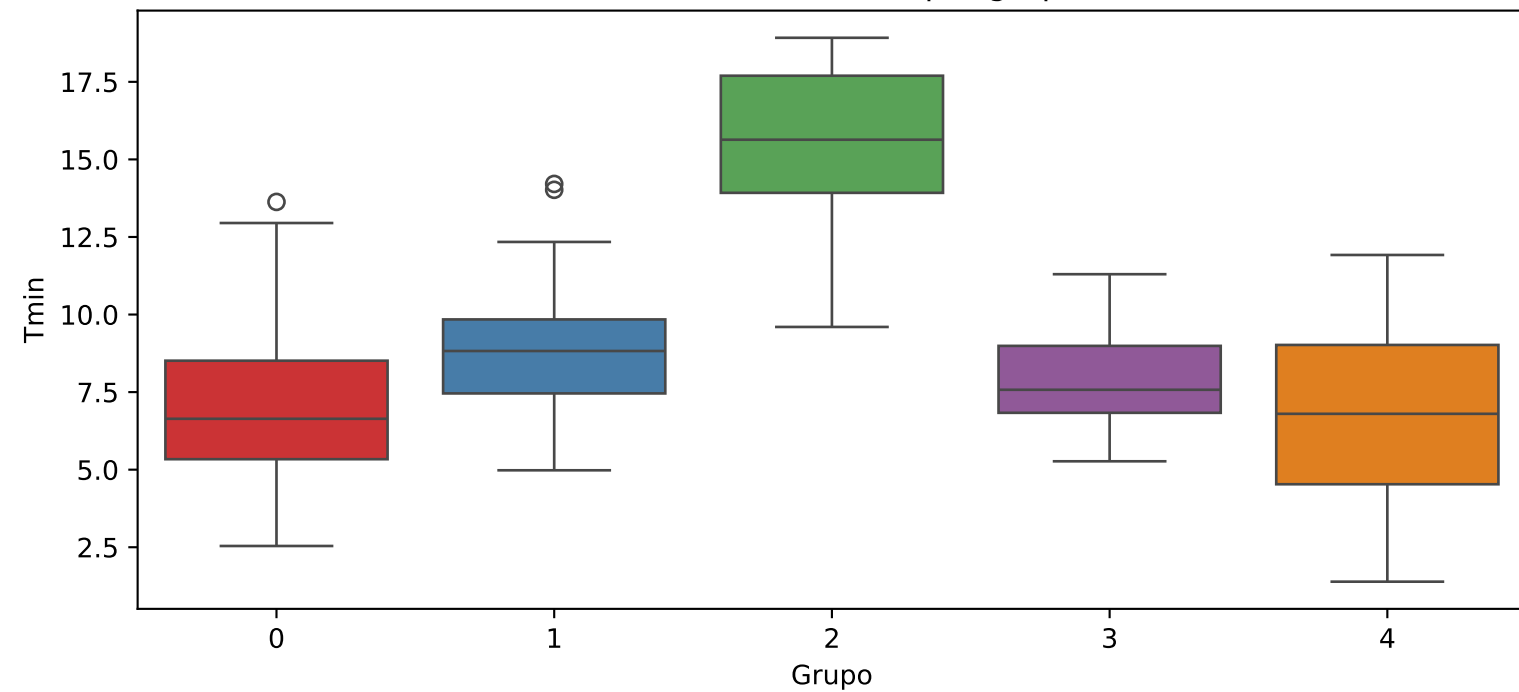


Boxplots por grupo — Ensenada (2022-2023)

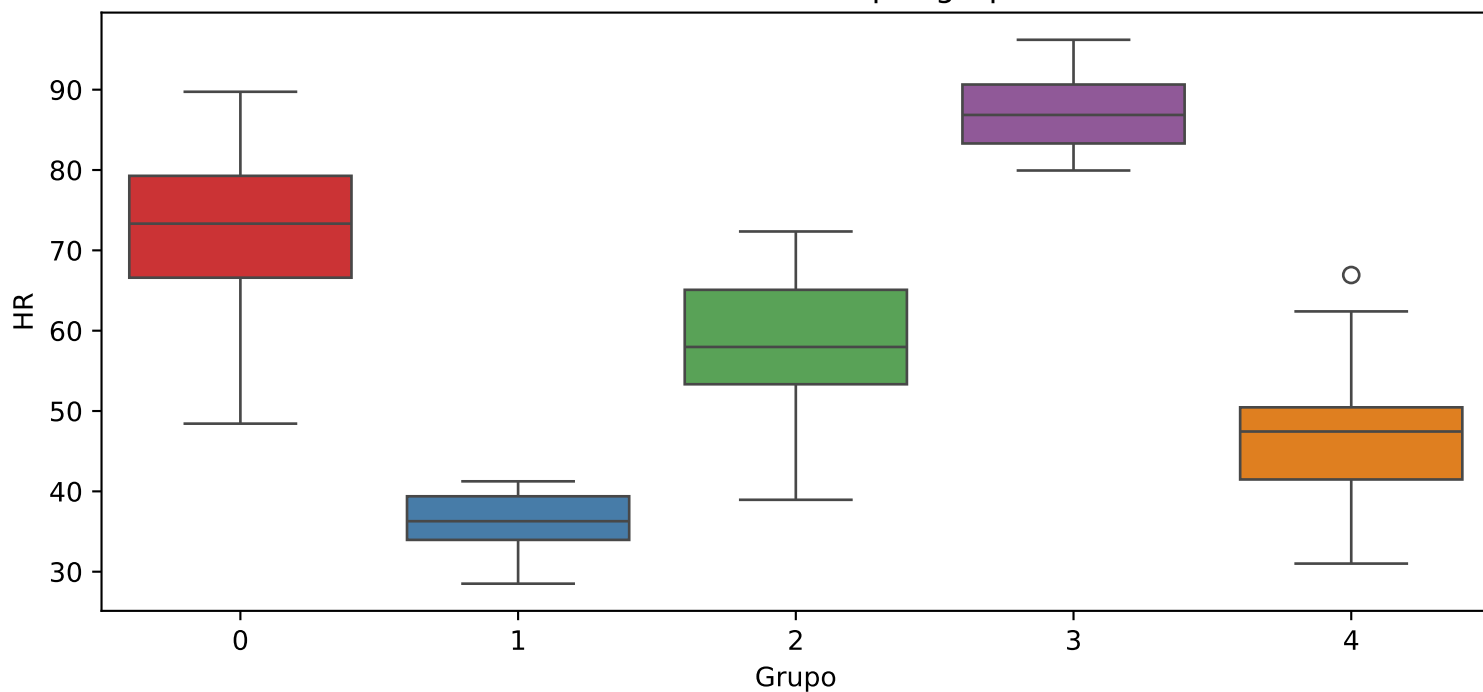
Distribución de Tmax por grupo



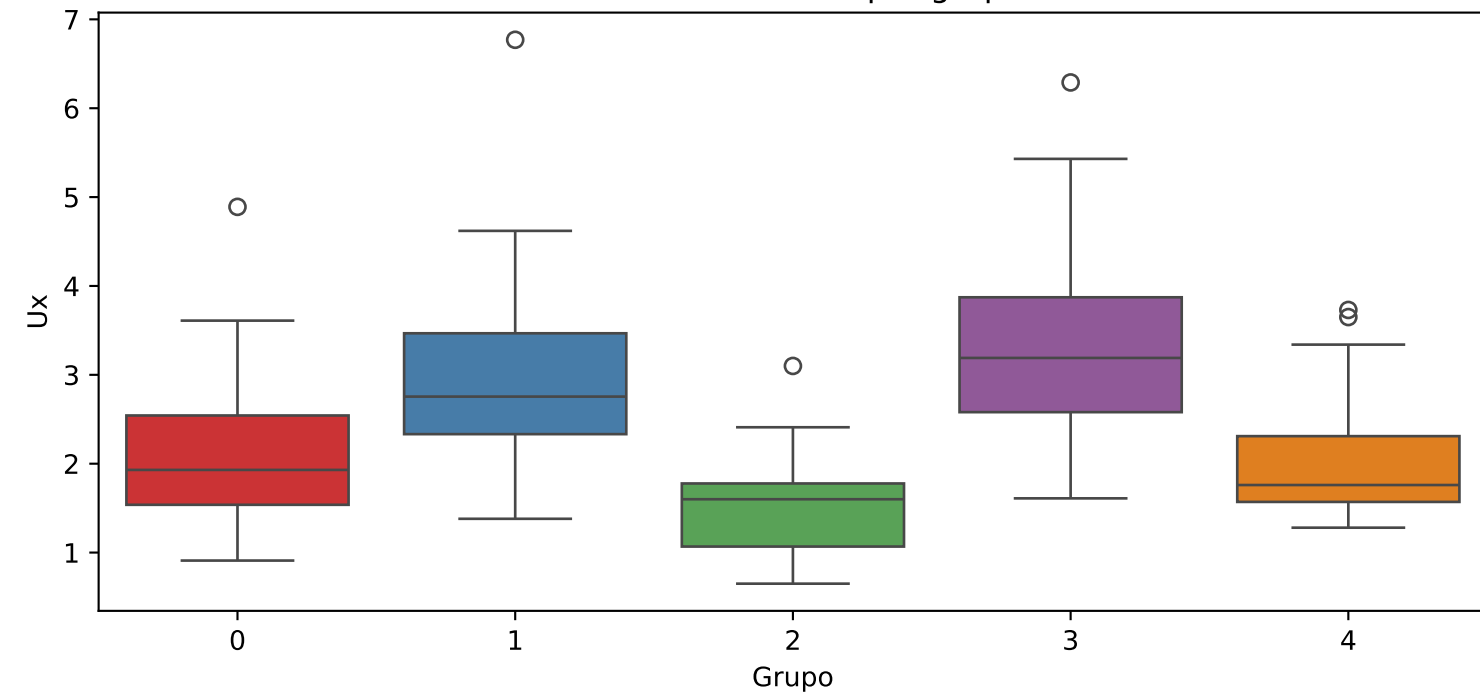
Distribución de Tmin por grupo



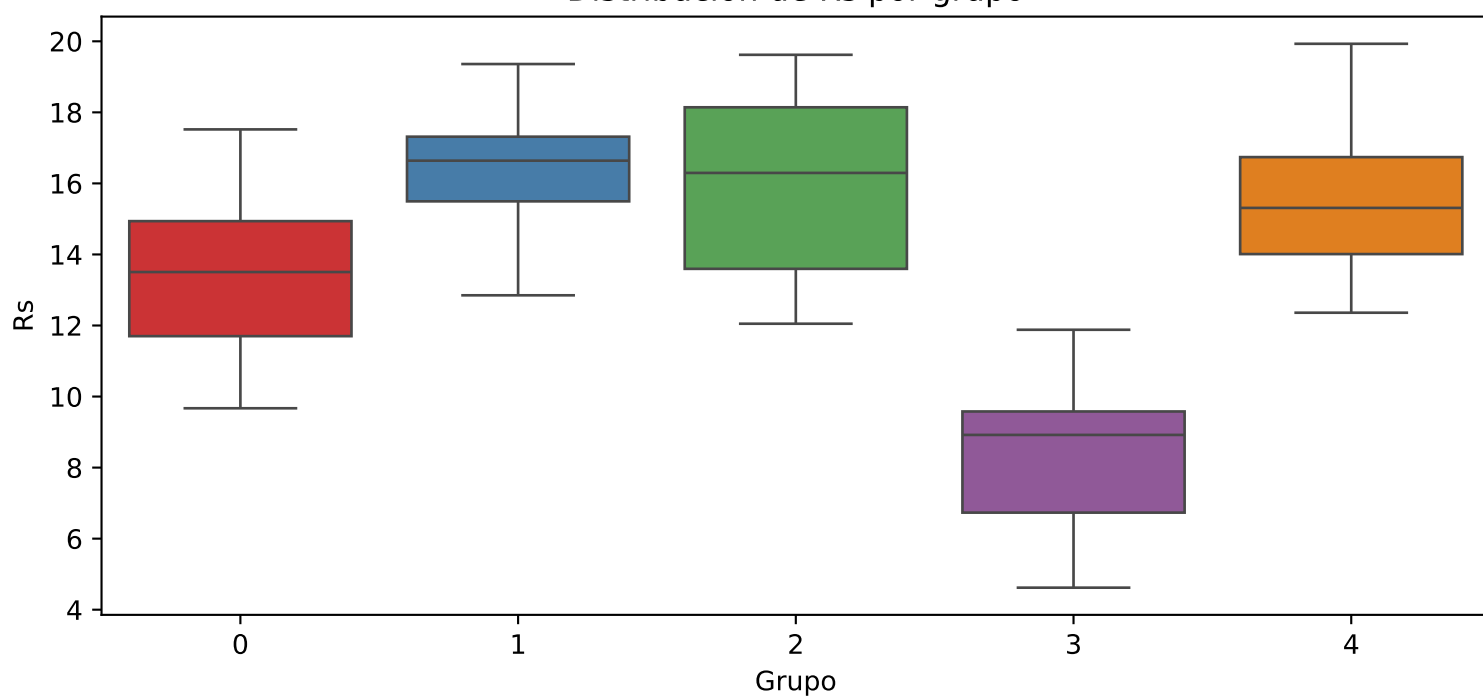
Distribución de HR por grupo



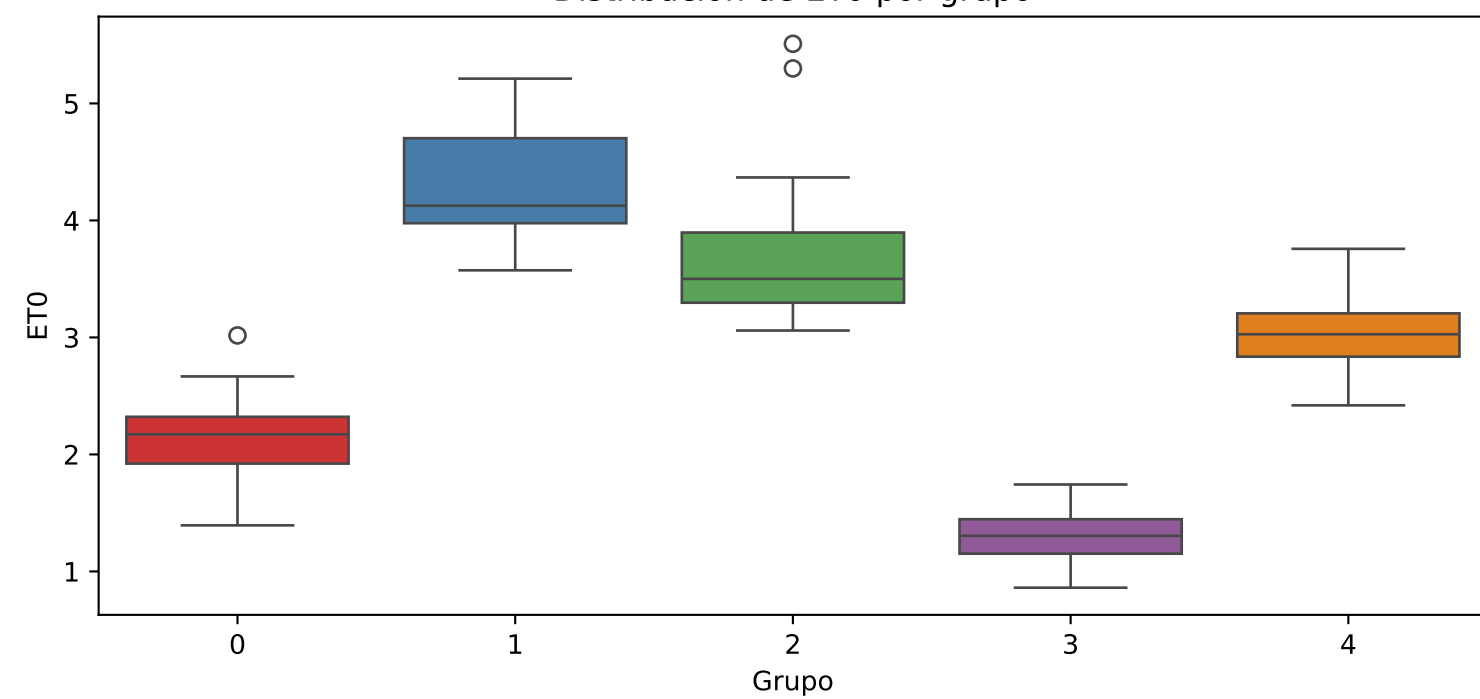
Distribución de Ux por grupo



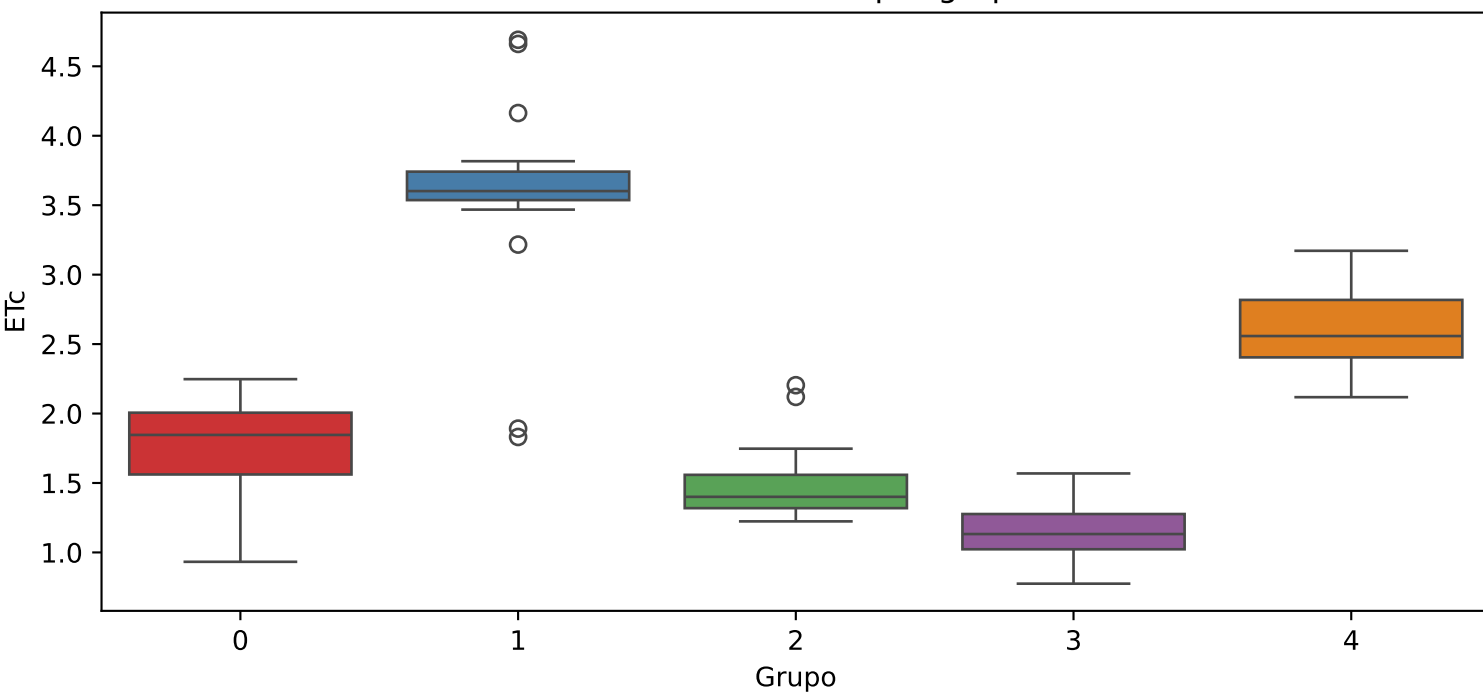
Distribución de Rs por grupo



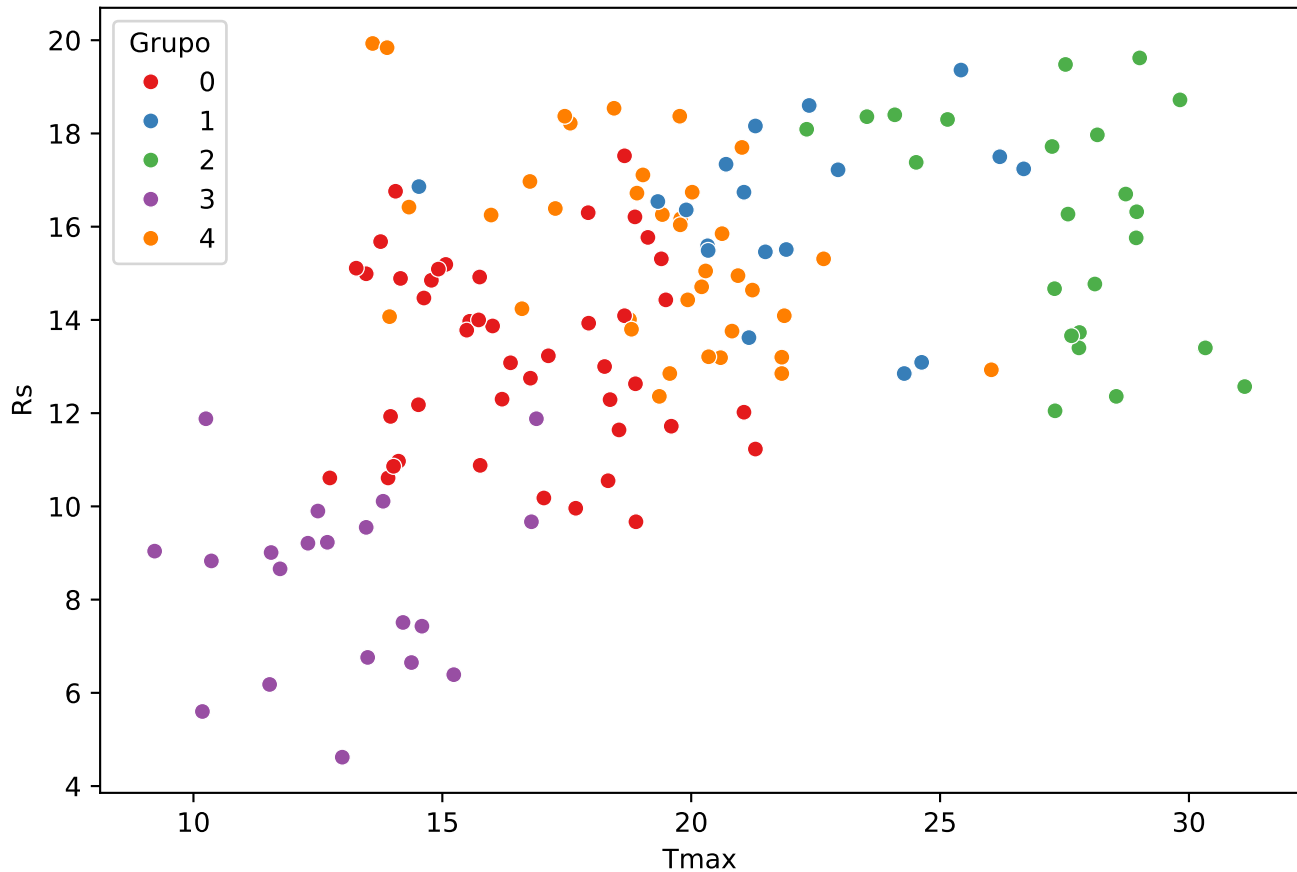
Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2022-2023)



Ensenada — 2023-2024

Días del ciclo: 143

ETc total [mm]: 312.8

ETverde total [mm]: 26.8

ETazul total [mm]: 286.0

Tmax / Tmin [°C]: 34.4 / 1.8

Ensenada — 2023-2024 · Resultados y métricas

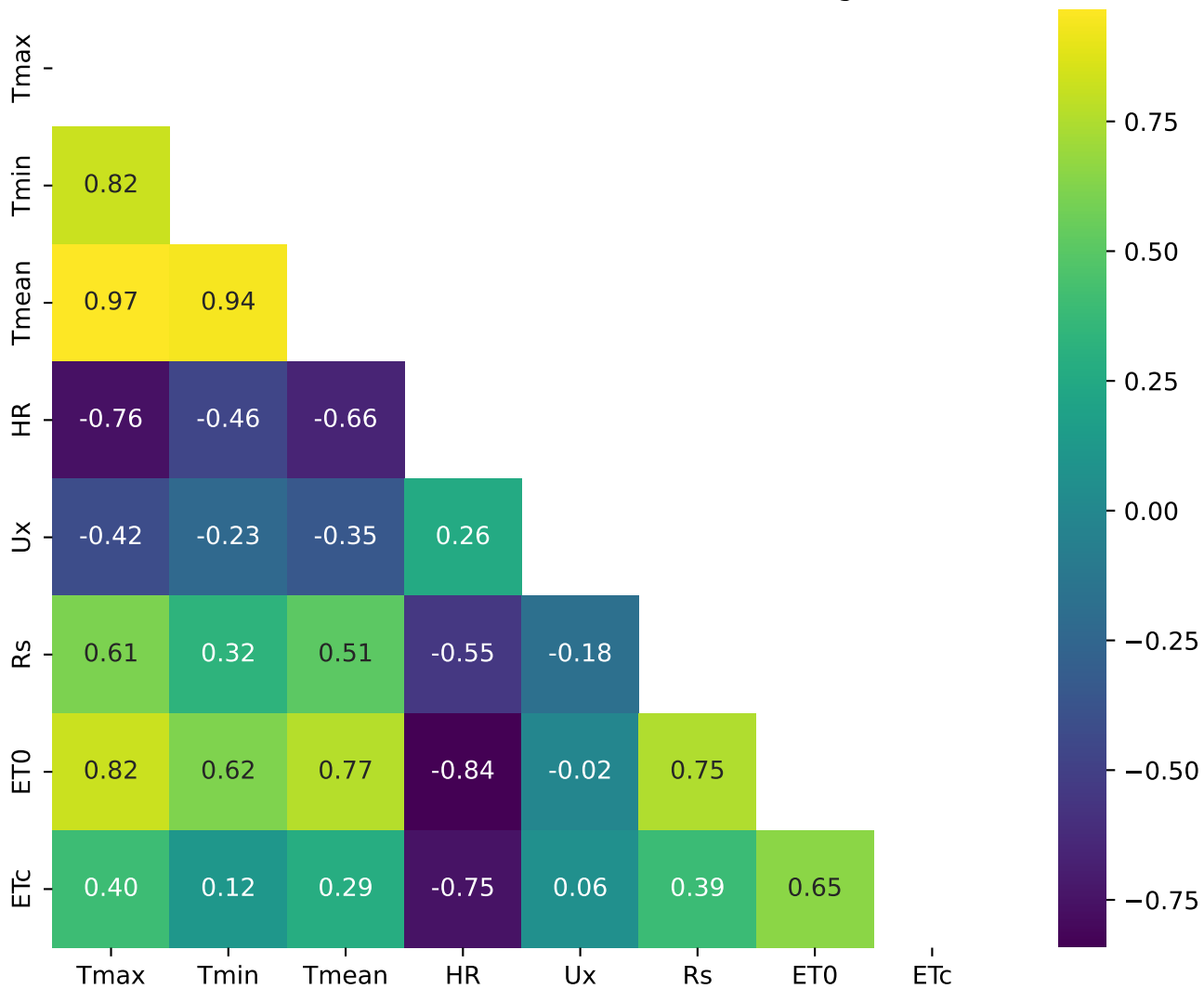
[Ensenada 2023-2024] Regresión Lineal ET0 — R²: 0.9554 MSE: 0.0711
[Ensenada 2023-2024] Random Forest ET0 — R²: 0.9085 MSE: 0.1459
Importancias: {'Tmax': 0.3127916769423487, 'Tmin': 0.014815278731046443, 'HR': 0.45017434823221064, 'Ux': 0.039268659798598976, 'Rs': 0.18295003629579523}

Estadísticas descriptivas por grupo (medias):

| | Tmax mean | Tmin mean | HR mean | Ux mean | Rs mean | ET0 mean | ETc mean |
|---------|--------------|--------------|------------|------------|------------|-------------|-------------|
| cluster | | | | | | | |
| 0 | 21.432857 | 10.234286 | 33.642857 | 4.662857 | 16.290000 | 5.338789 | 4.399100 |
| 1 | 15.423514 | 8.782432 | 84.006486 | 2.990270 | 10.287027 | 1.651579 | 1.333810 |
| 2 | 30.751176 | 18.198824 | 36.552941 | 1.628235 | 18.977059 | 4.977643 | 1.991057 |
| 3 | 25.077500 | 12.093500 | 34.554000 | 1.809500 | 16.316000 | 3.921540 | 3.529386 |
| 4 | 19.958548 | 8.273065 | 63.543548 | 1.897419 | 15.005323 | 2.646293 | 2.068271 |

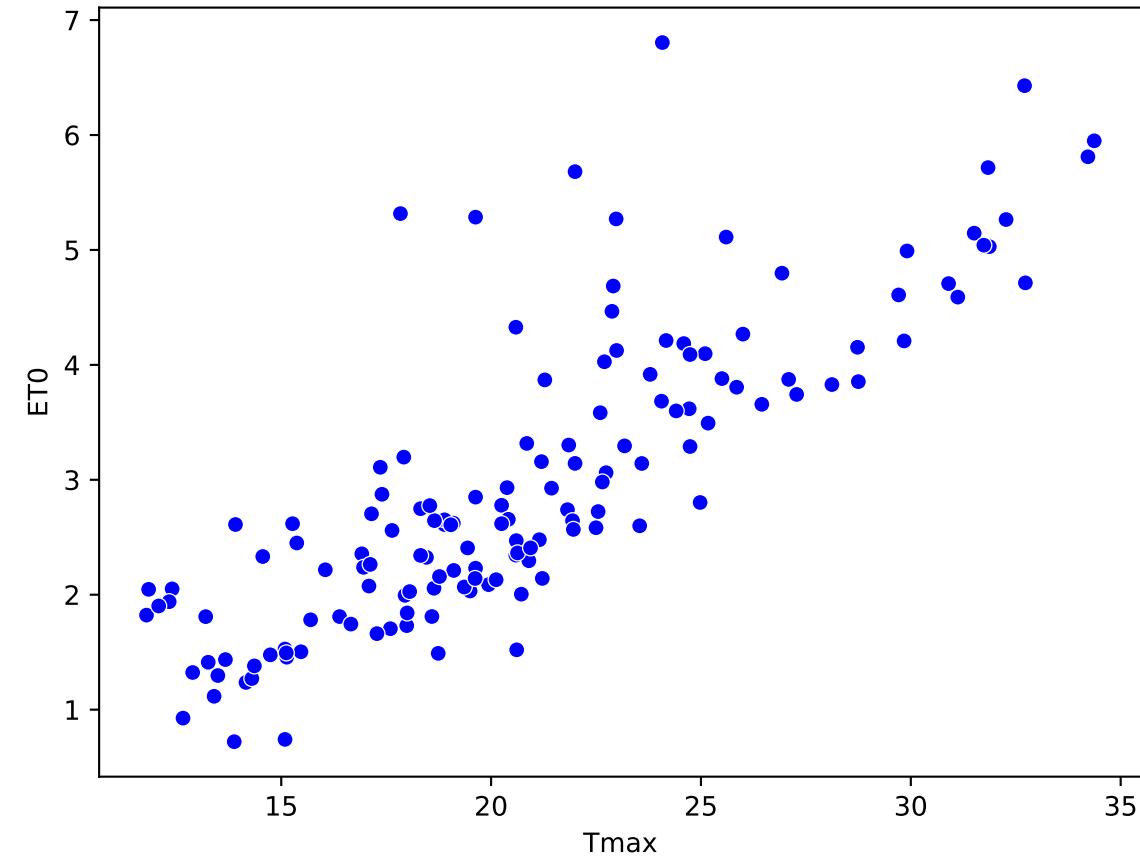
Ensenada — 2023-2024

Matriz de Correlación entre Variables Meteorológicas

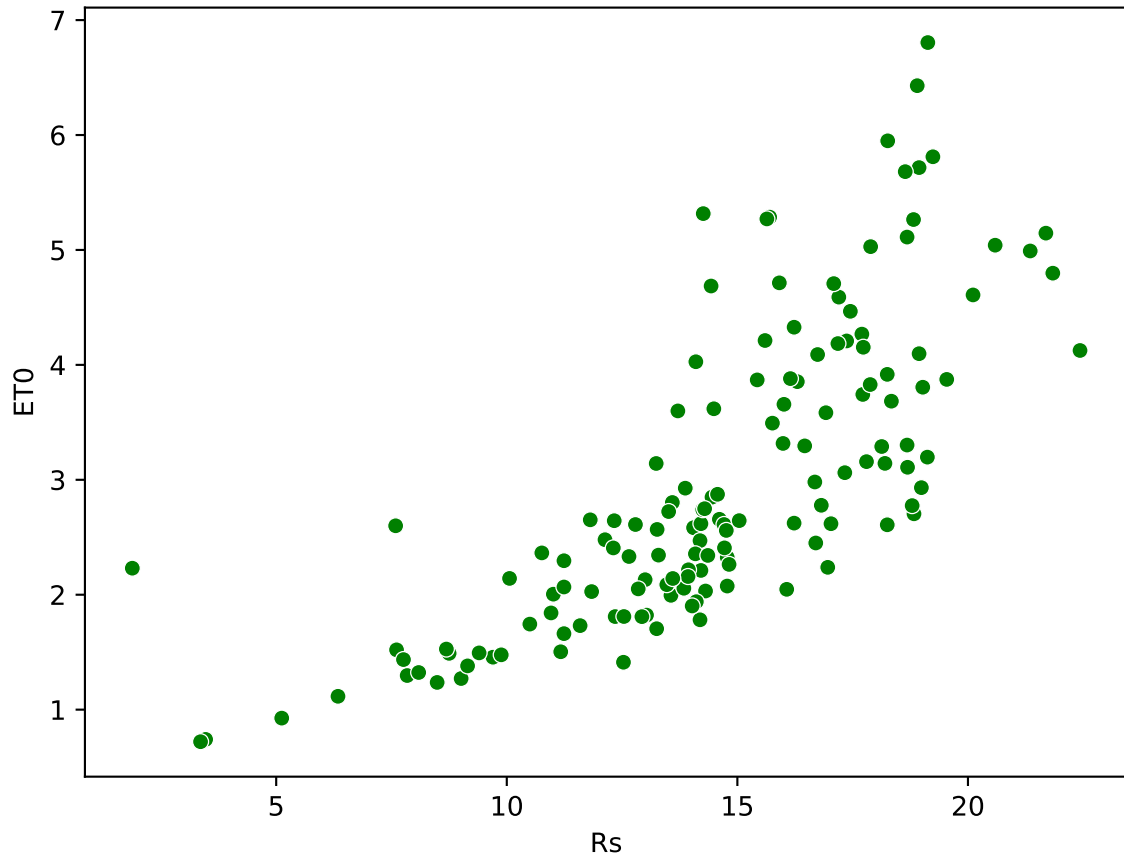


Dispersión — Ensenada (2023-2024)

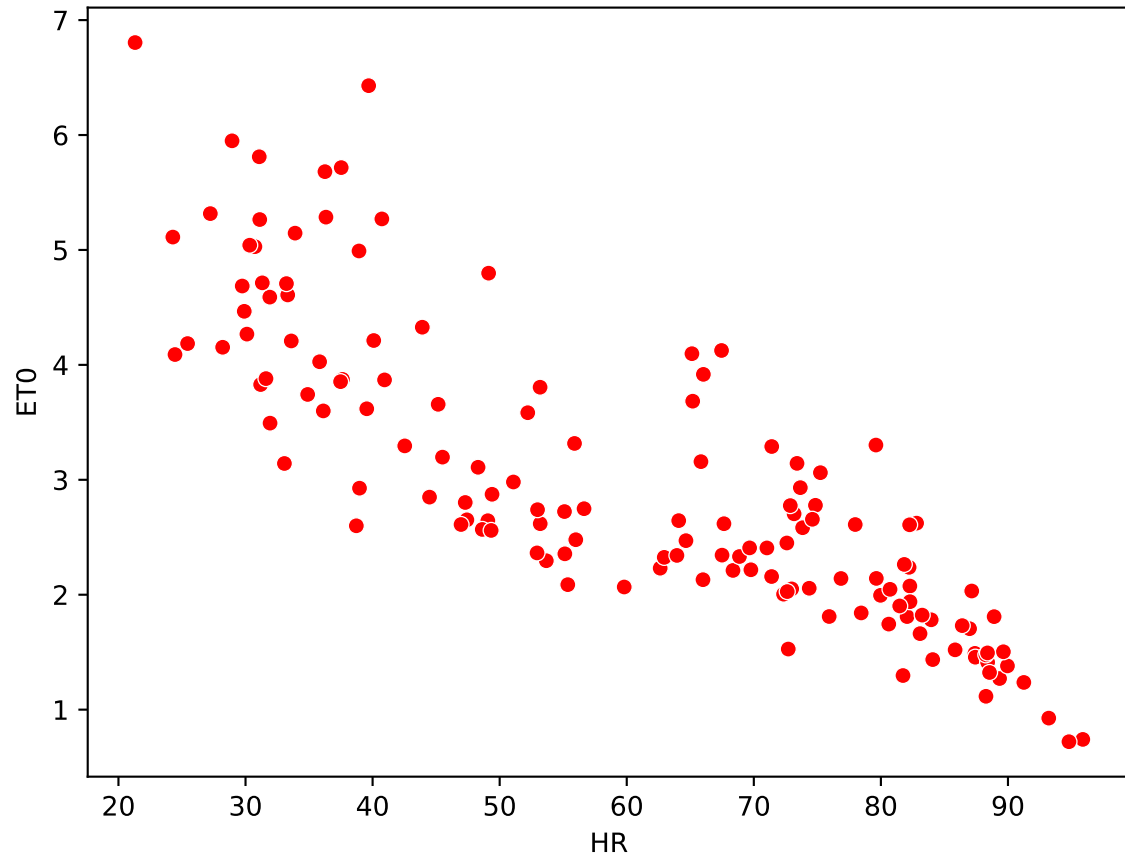
Tmax vs ET0



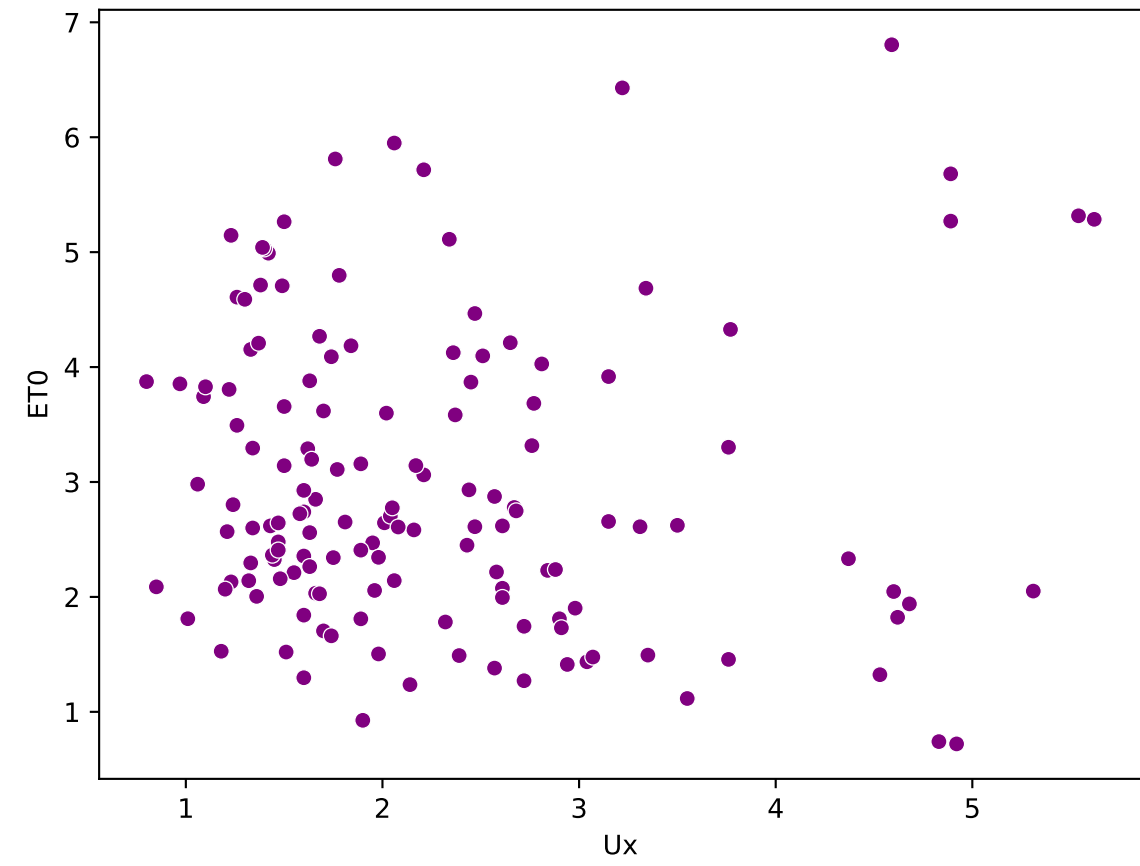
Rs vs ET0



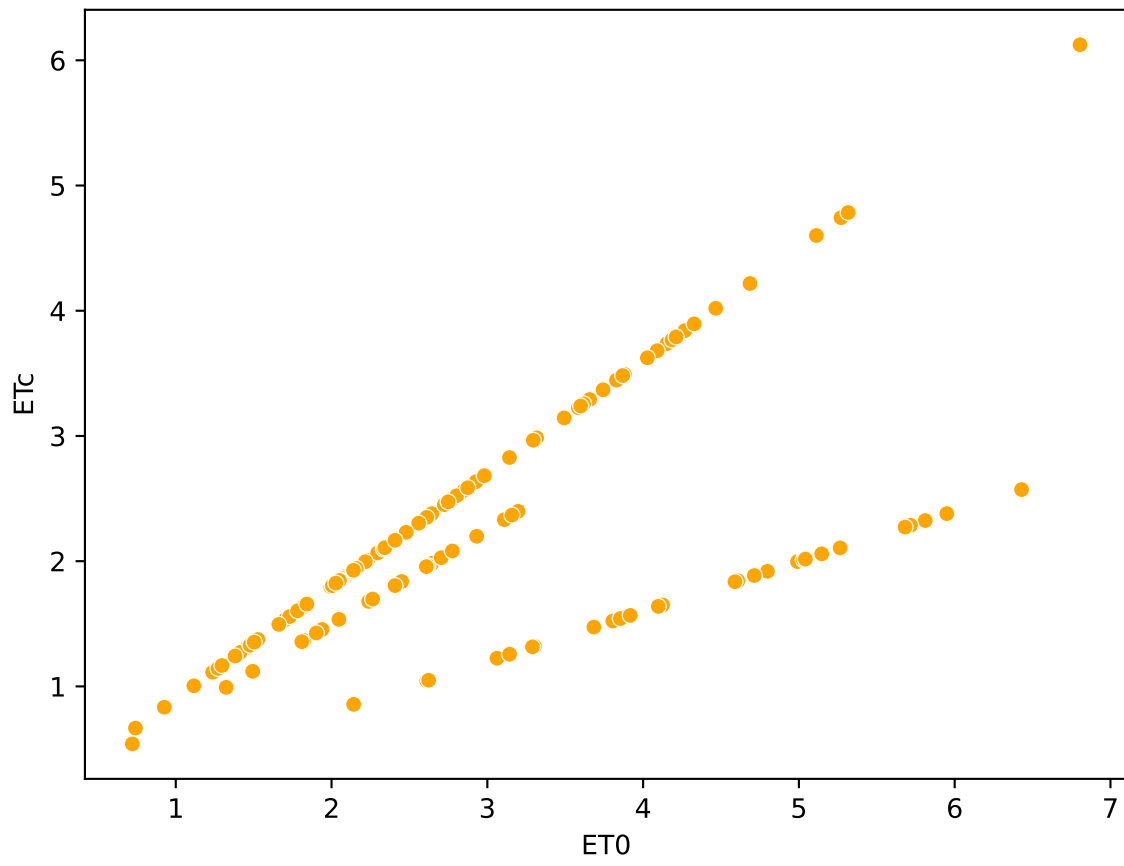
HR vs ET0



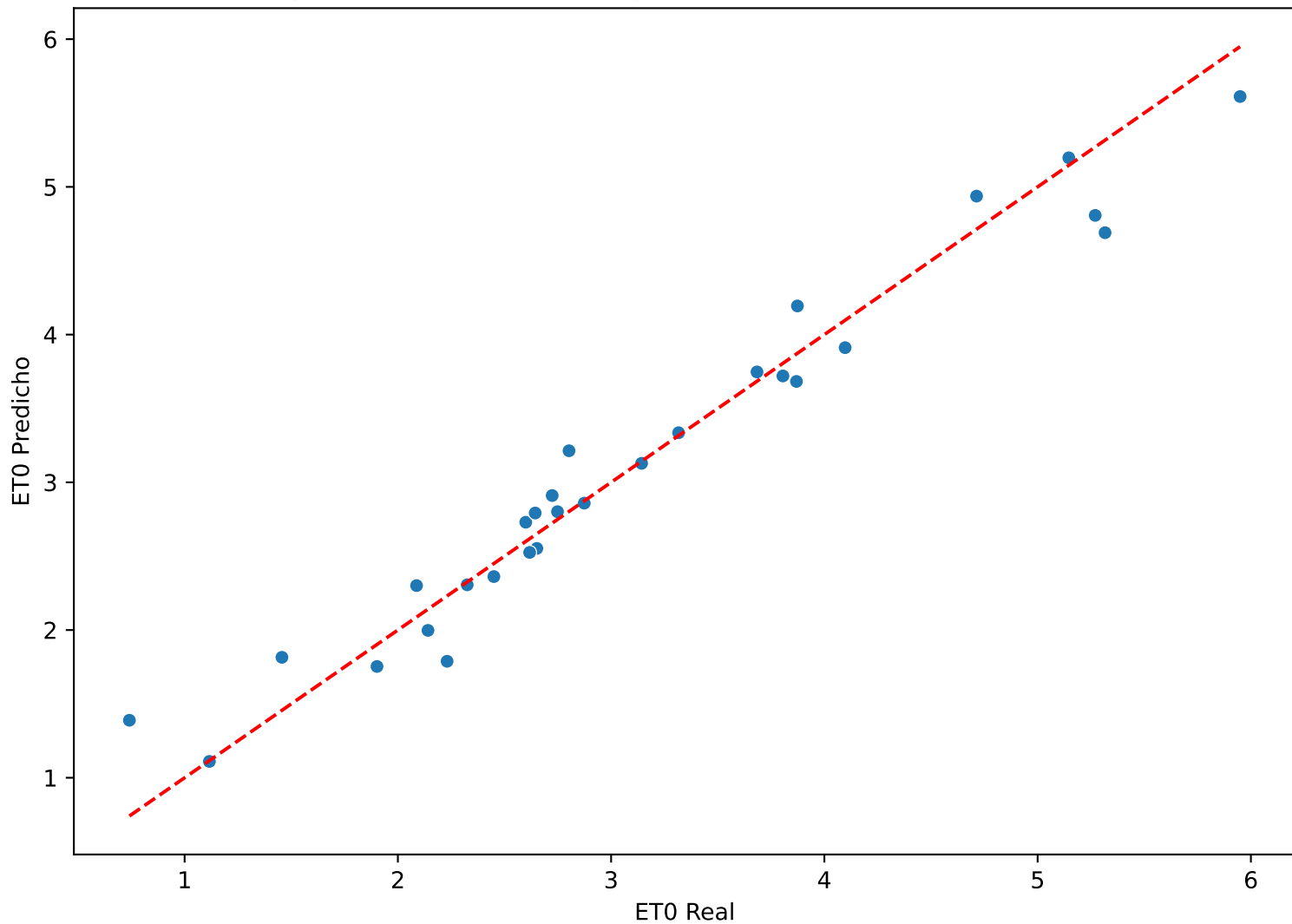
Ux vs ET0



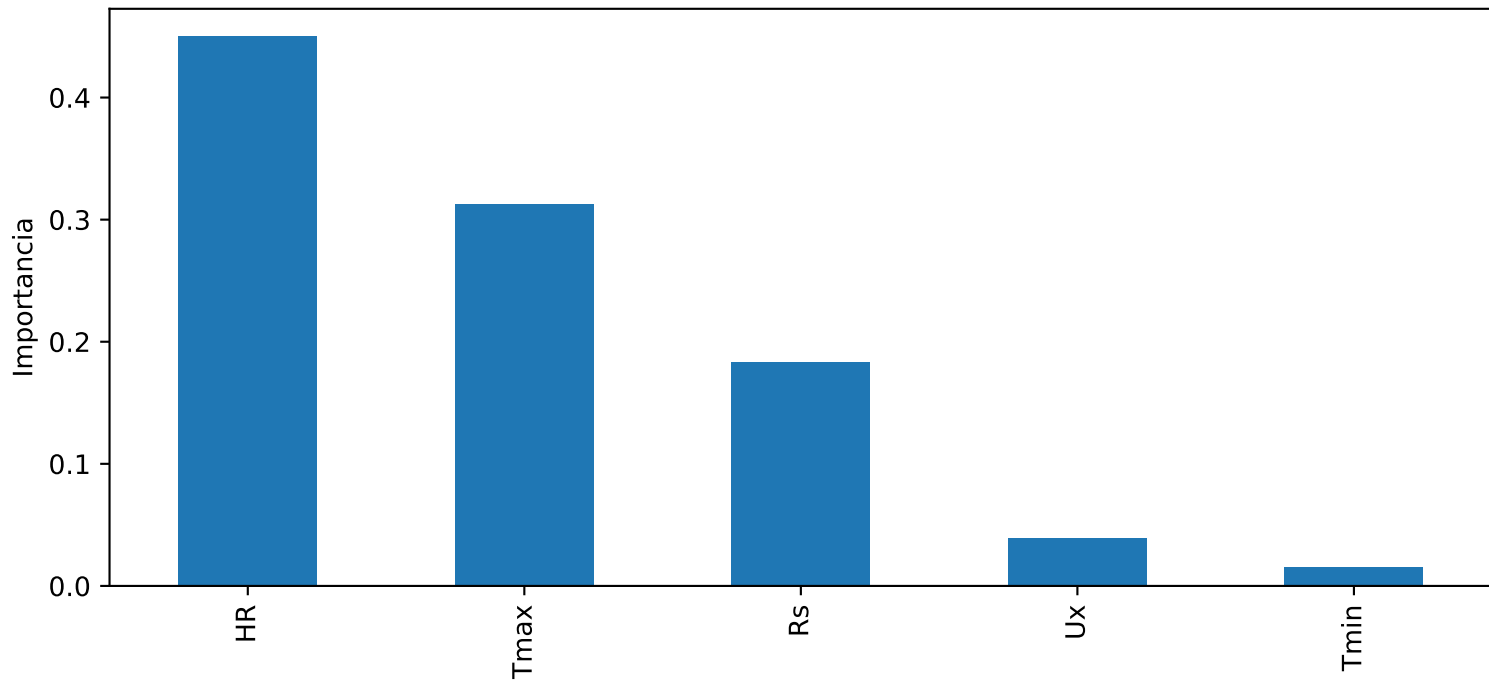
ET0 vs ETc



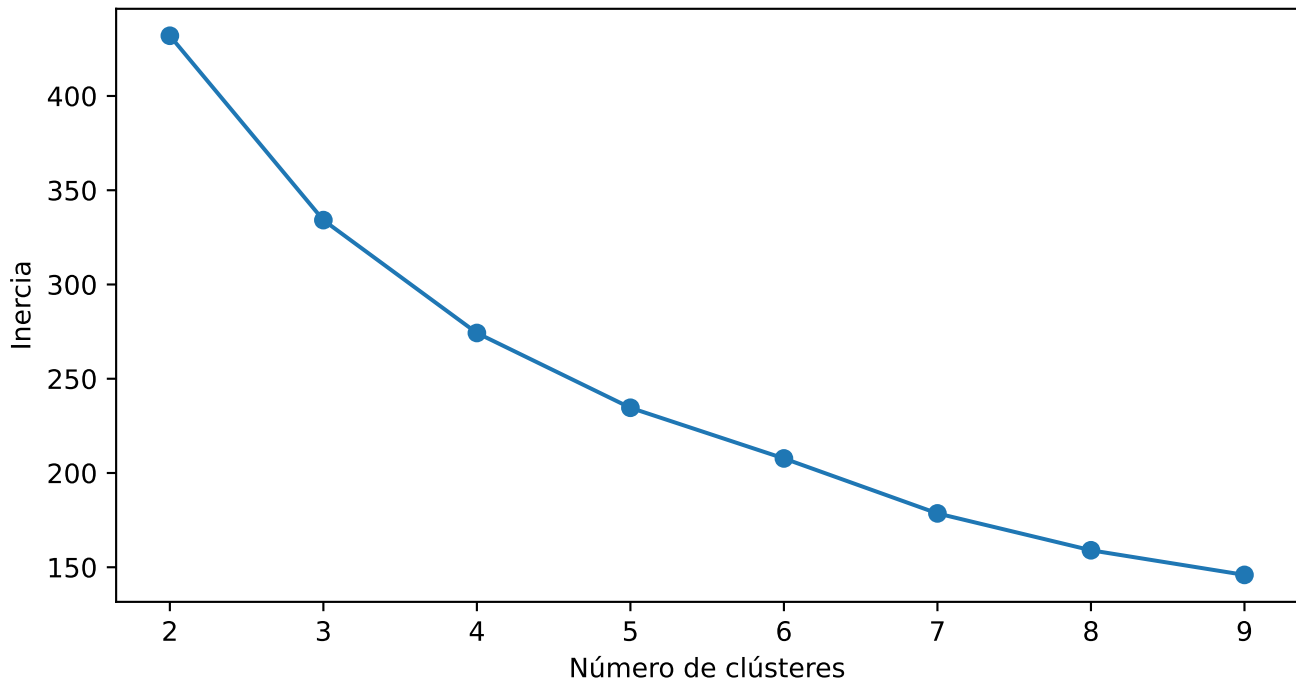
Comparación entre ET0 Real y Predicho — Ensenada (2023-2024)



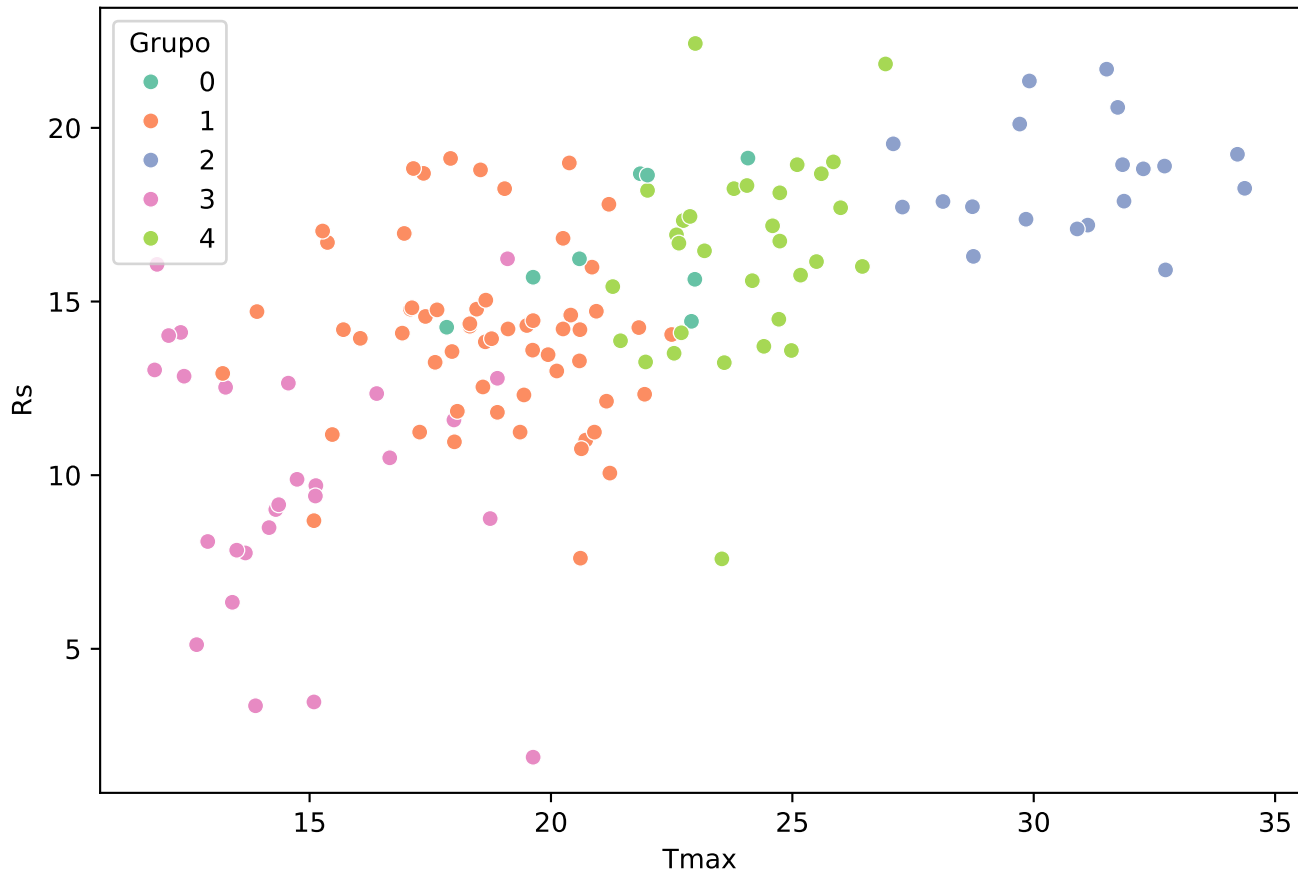
Importancia de variables (RF) — Ensenada (2023-2024)



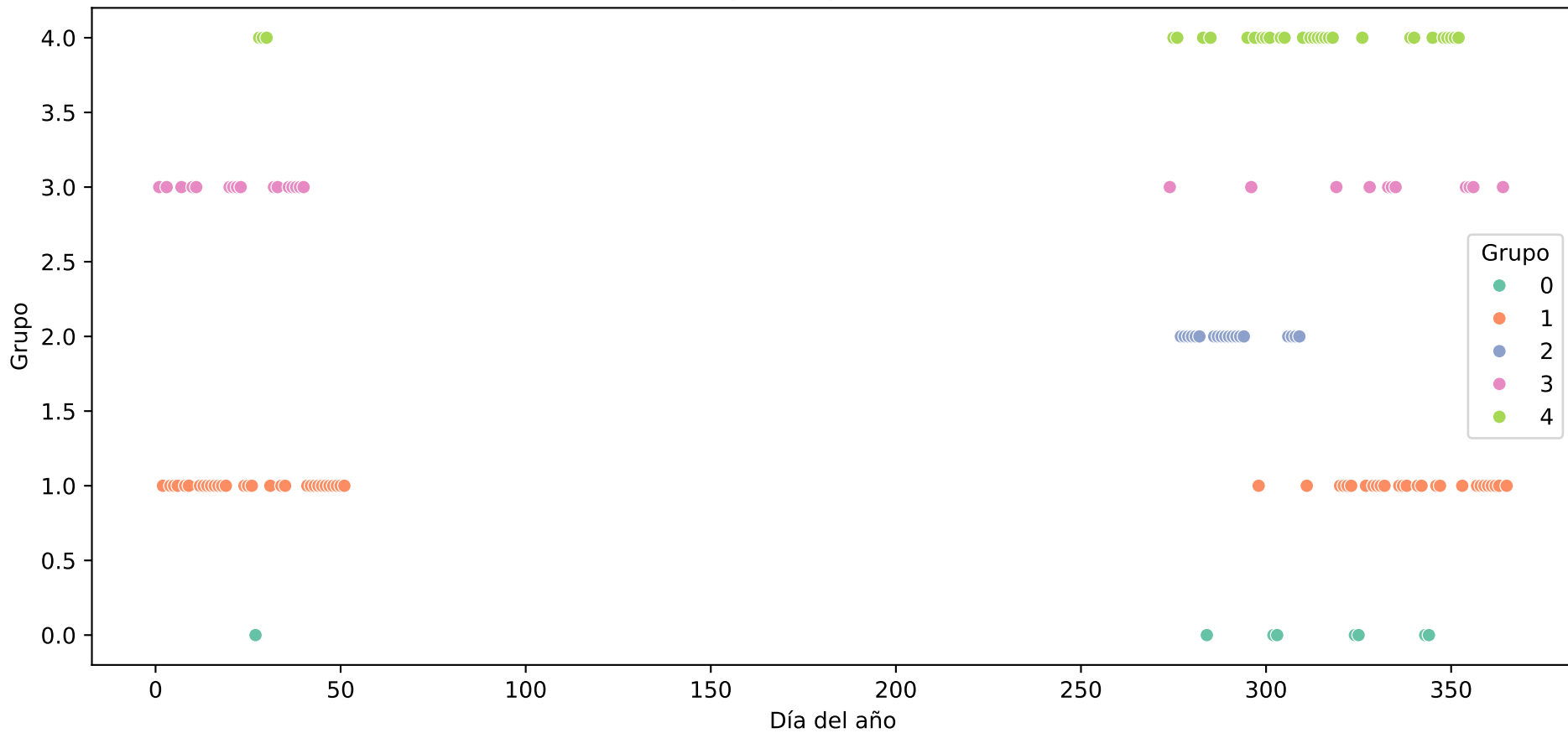
Método del codo



Clasificación de días climáticos — Ensenada (2023-2024)

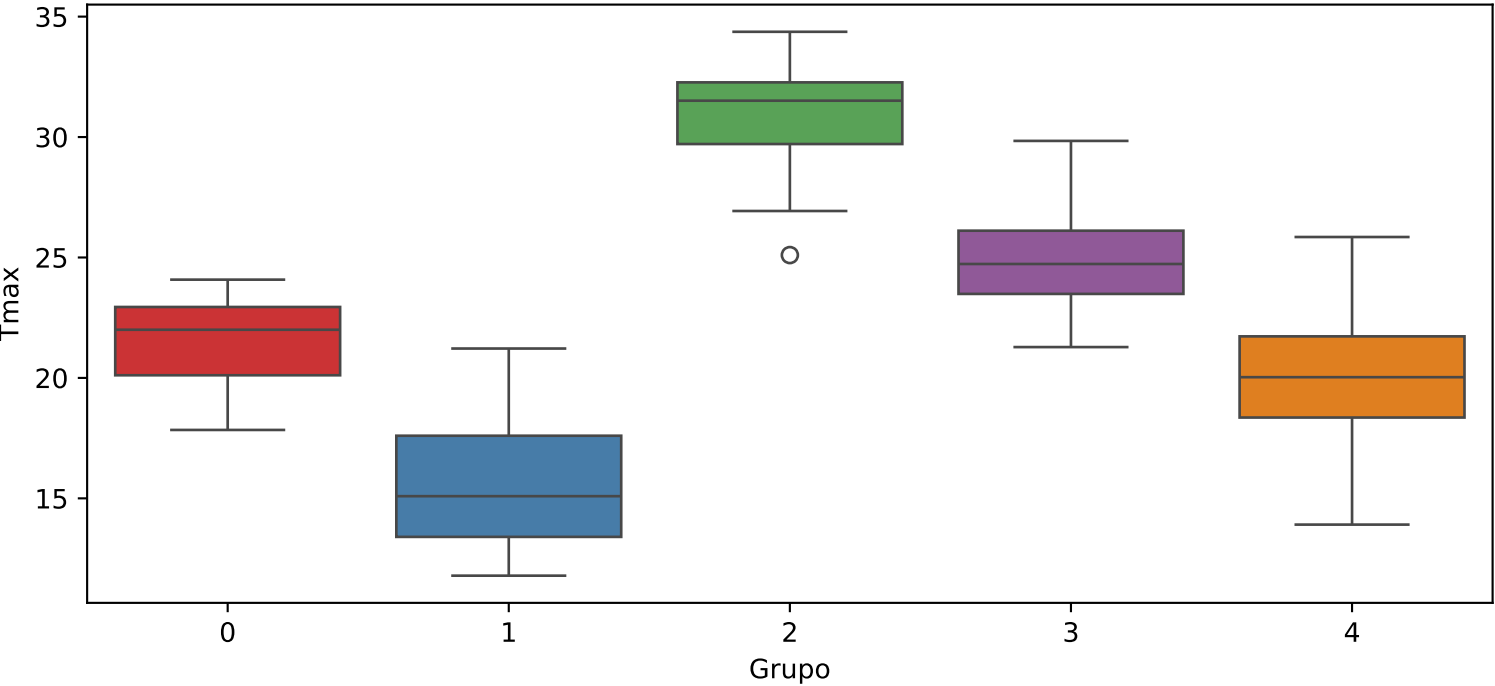


Distribución de días por grupo — Ensenada (2023-2024)

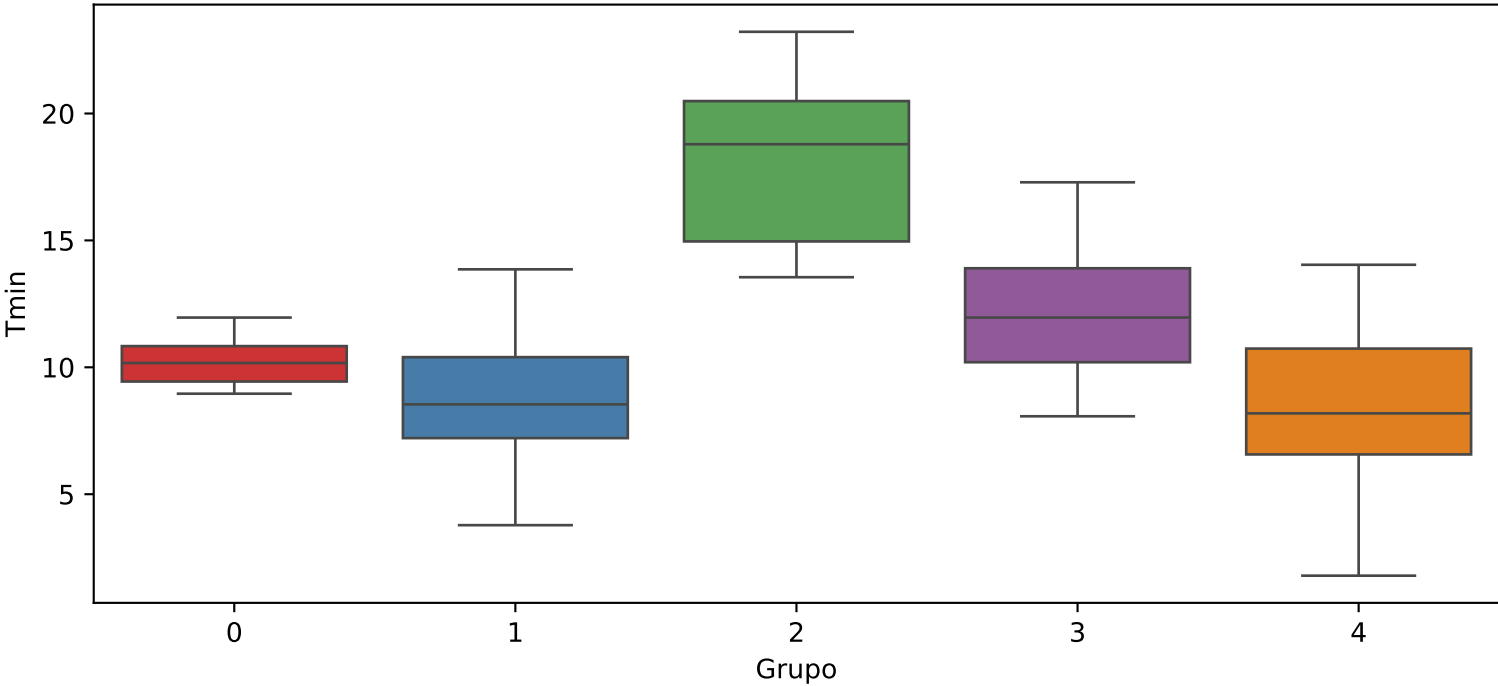


Boxplots por grupo — Ensenada (2023-2024)

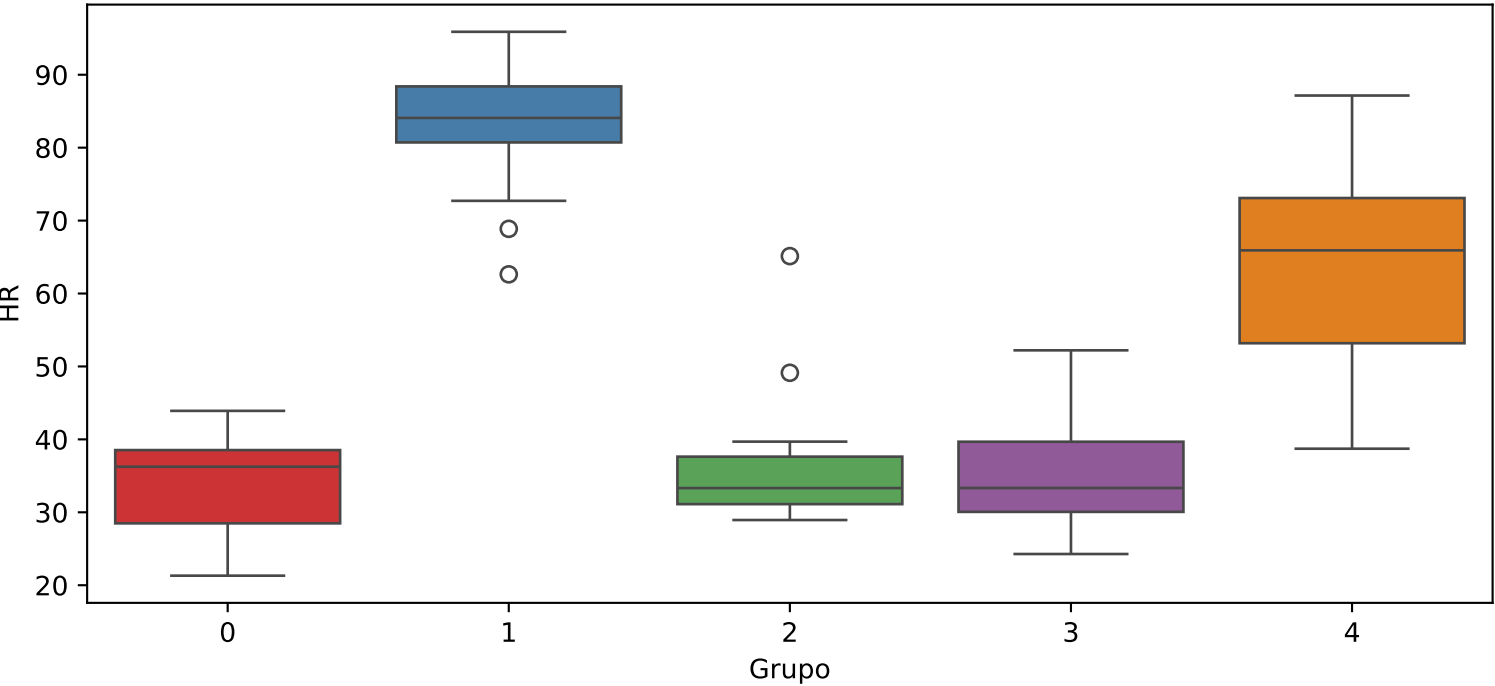
Distribución de Tmax por grupo



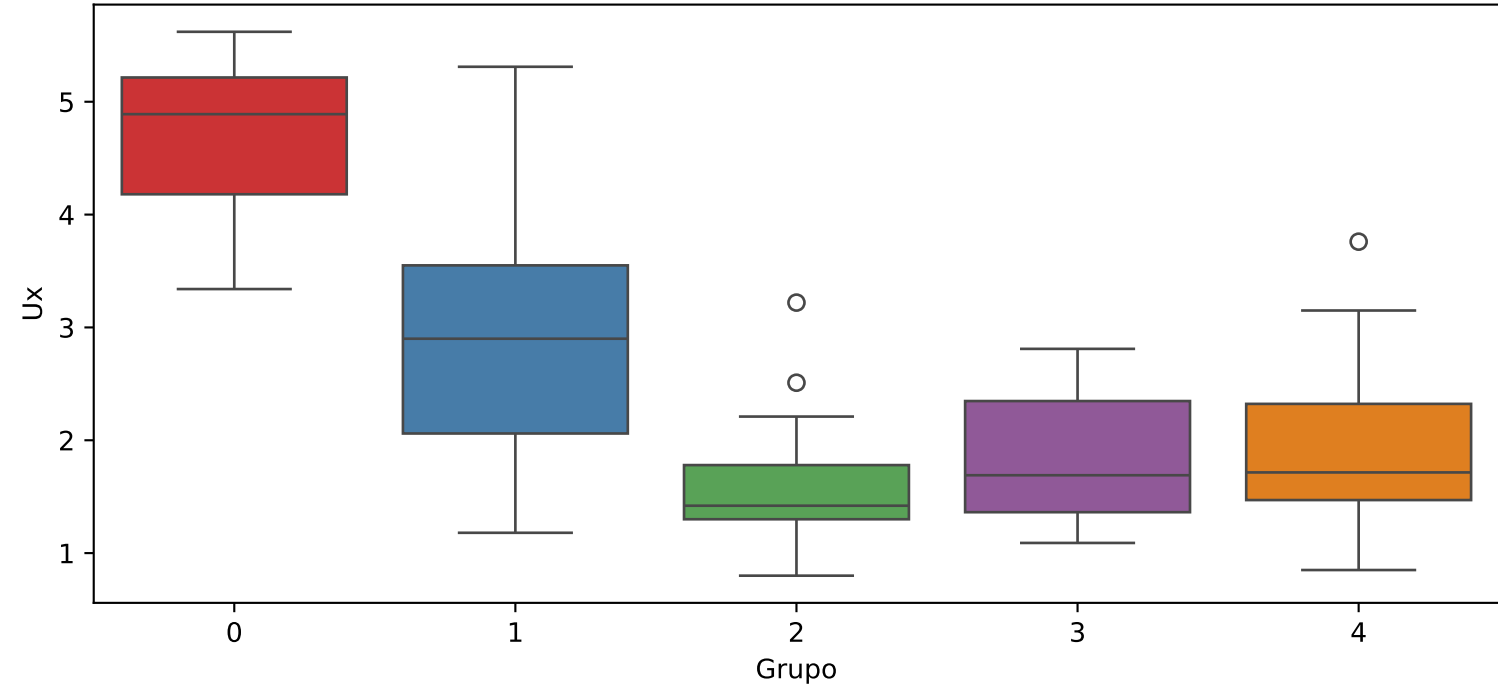
Distribución de Tmin por grupo



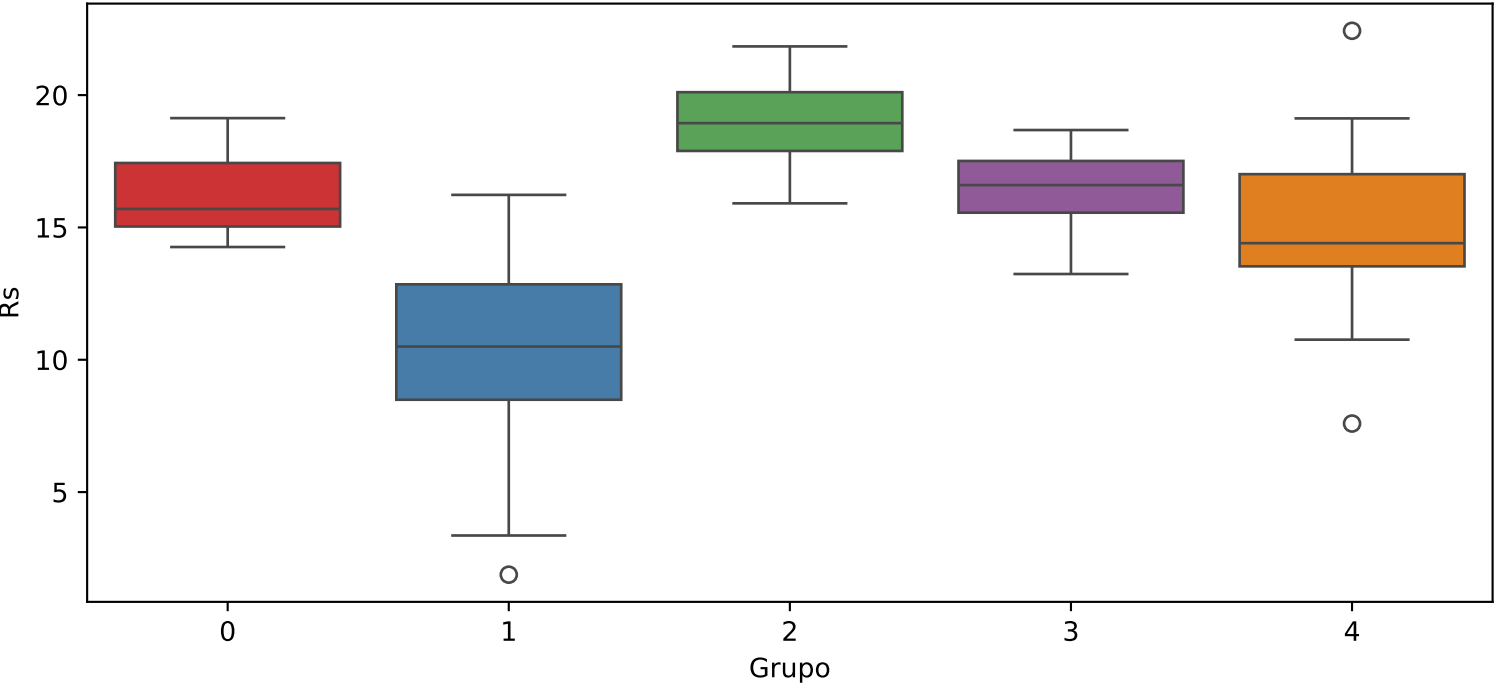
Distribución de HR por grupo



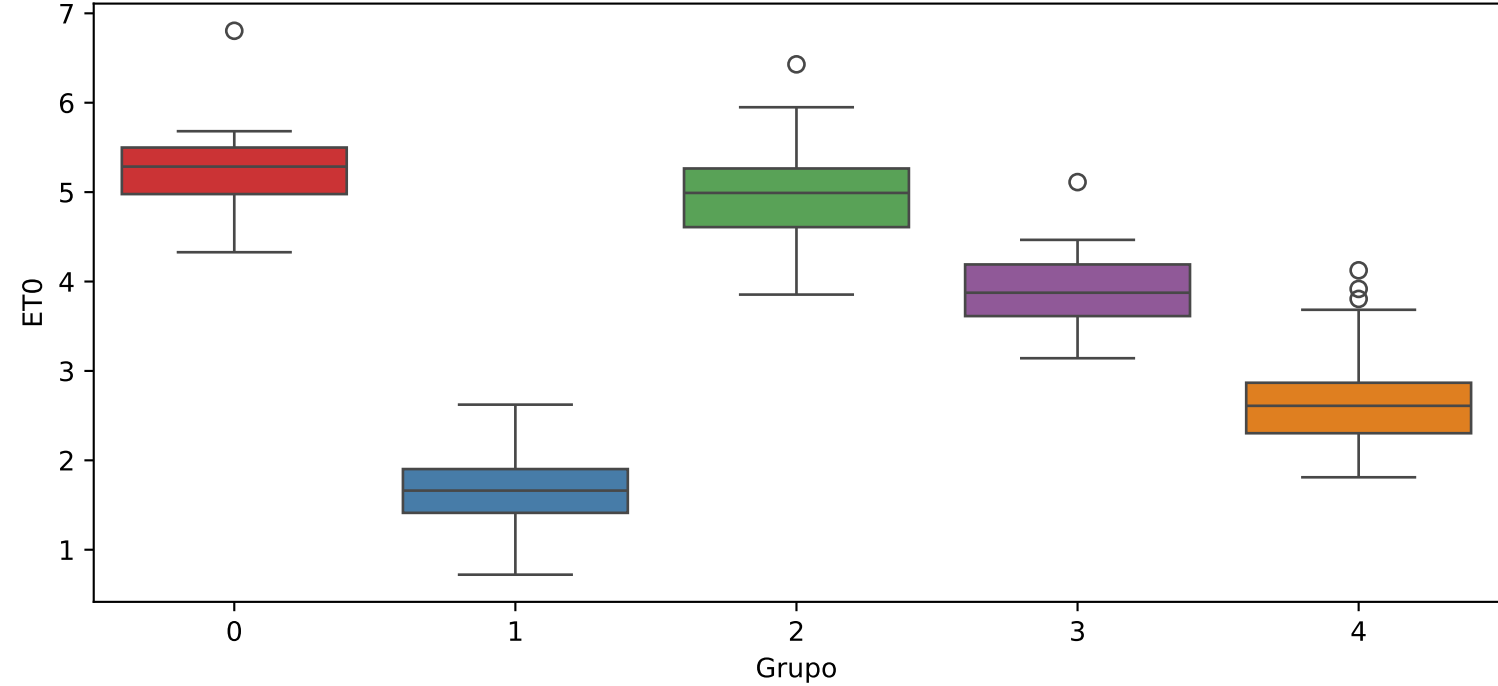
Distribución de Ux por grupo



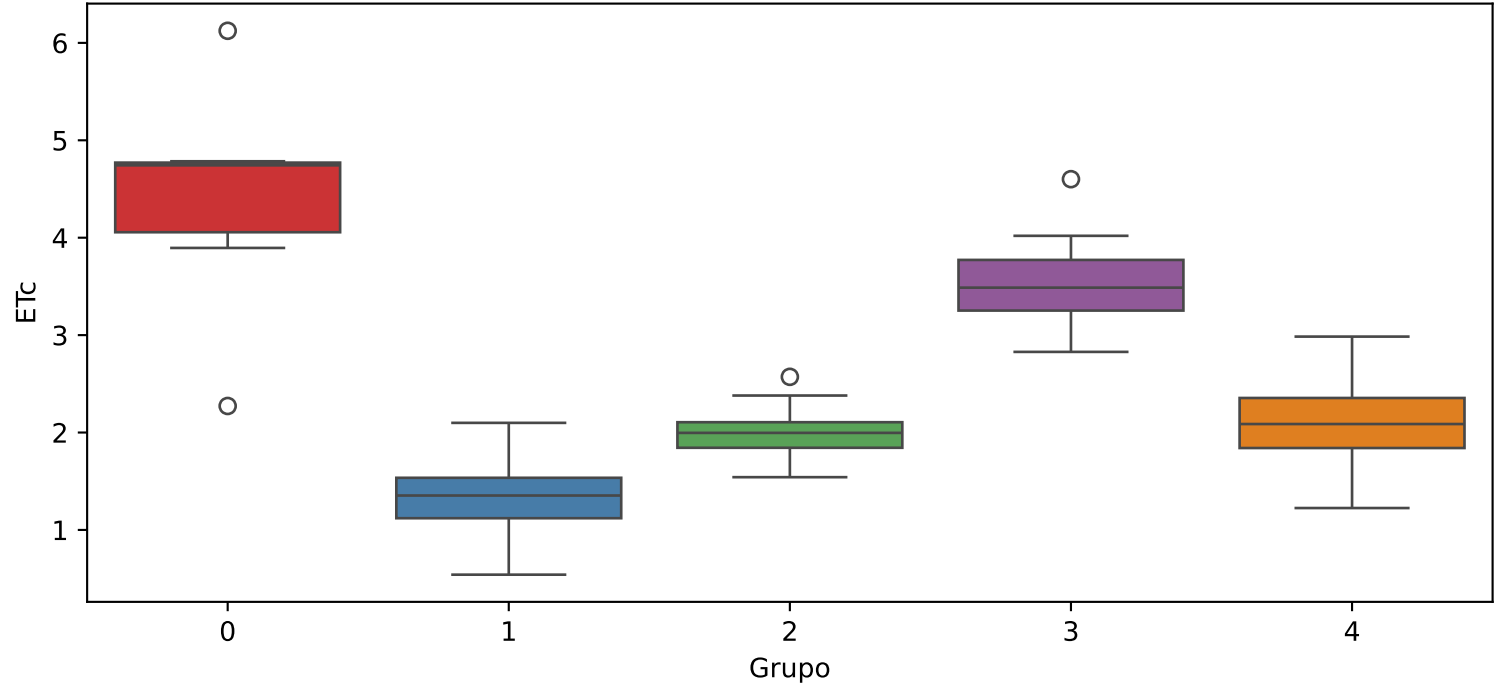
Distribución de Rs por grupo



Distribución de ET0 por grupo



Distribución de ETc por grupo



Clasificación de días climáticos (ET0/ETc incluidos) — Ensenada (2023-2024)

