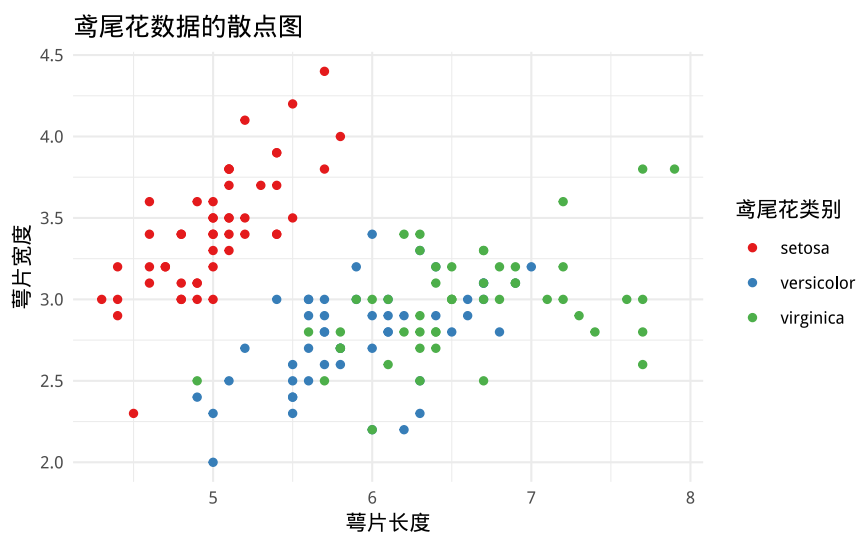# 中文 R Markdown 文档

黄湘云

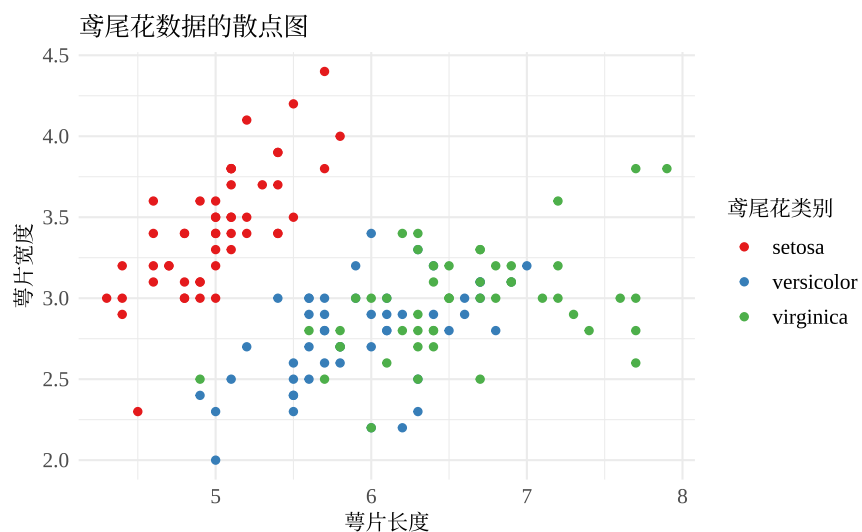*2019-04-13*

1 字体

1.1 中文

```r
library(ggplot2)
#> Registered S3 methods overwritten by 'ggplot2':
#>   method         from
#>   [.quosures     rlang
#>   c.quosures     rlang
#>   print.quosures rlang
ggplot(iris, aes(Sepal.Length, Sepal.Width)) +
  geom_point(aes(colour = Species)) +
  scale_colour_brewer(palette = "Set1") +
  labs(
    title = " 鸢尾花数据的散点图",
    x = " 萼片长度", y = " 萼片宽度", colour = " 鸢尾花类别"
  ) +
  theme_minimal(base_size = 10.54, base_family = "wqy-microhei")
```
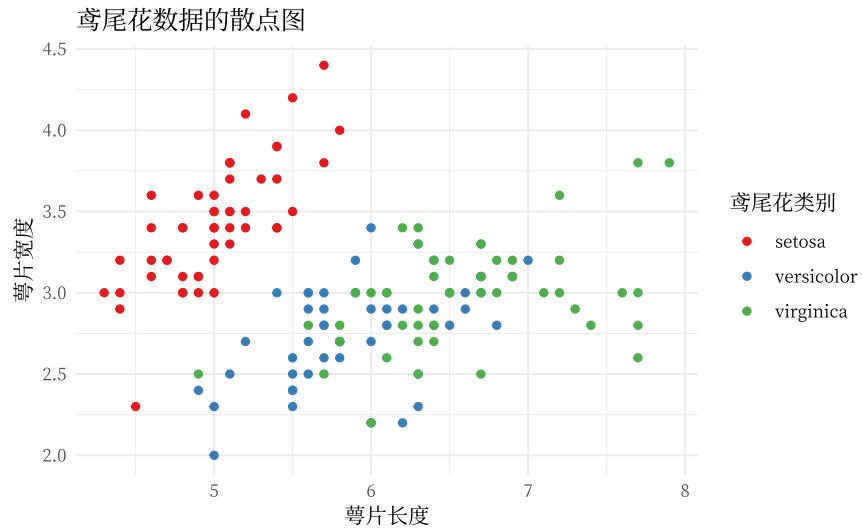

图形里的字体，以矿大学位论文的要求为例，

1. 字体宋体，五号
2. 数字、字母字体都是 Times New Roman
3. 5 号字体对应 10.54pt，宋体此处采用思源宋体

```r
ggplot(iris, aes(Sepal.Length, Sepal.Width)) +
  geom_point(aes(colour = Species)) +
  scale_colour_brewer(palette = "Set1") +
  labs(
    title = " 鸢尾花数据的散点图",
    x = " 萼片长度", y = " 萼片宽度", colour = " 鸢尾花类别"
  ) +
  theme_minimal(base_size = 10.54, base_family = "source-han-serif-cn") +
  theme(
    legend.text = element_text(family = "serif", size = 10.54),
    axis.text = element_text(family = "serif", size = 10.54)
  )
```


简单起见，字体为思源宋体，字号 5 号，英文和数字随思源宋体，不再另外设置，其实看不出来差别

```r
ggplot(iris, aes(Sepal.Length, Sepal.Width)) +
  geom_point(aes(colour = Species)) +
  scale_colour_brewer(palette = "Set1") +
  labs(
    title = " 鸢尾花数据的散点图",
    x = " 萼片长度", y = " 萼片宽度", colour = " 鸢尾花类别"
  ) +
  theme_minimal(base_size = 10.54, base_family = "source-han-serif-cn")
```

鸢尾花数据的散点图

自定义中文字体

1. 标题：思源宋体加粗
2. 坐标轴标签：思源宋体
3. 图例：思源黑体

```
ggplot(iris, aes(Sepal.Length, Sepal.Width)) +
  geom_point(aes(colour = Species)) +
  scale_colour_brewer(palette = "Set1") +
  labs(
    title = " 鸢尾花数据的散点图",
    x = " 萼片长度", y = " 萼片宽度", colour = " 鸢尾花类别"
  ) +
  theme(
    title = element_text(family = "source-han-sans-cn", face = "plain", size = 10.54),
    axis.title = element_text(family = "source-han-serif-cn", face = "plain", size = 10.54),
    legend.title = element_text(family = "source-han-serif-cn", face = "plain", size = 10.54),
    axis.ticks = element_line(colour = "black"),
    legend.text = element_text(family = "serif", size = 10.54),
    axis.text = element_text(family = "serif", size = 10.54),
    panel.grid.major = element_blank(),
    panel.grid.minor = element_blank(),
    panel.background = element_blank(),
    axis.line = element_line(size = 0.2)
  )
```
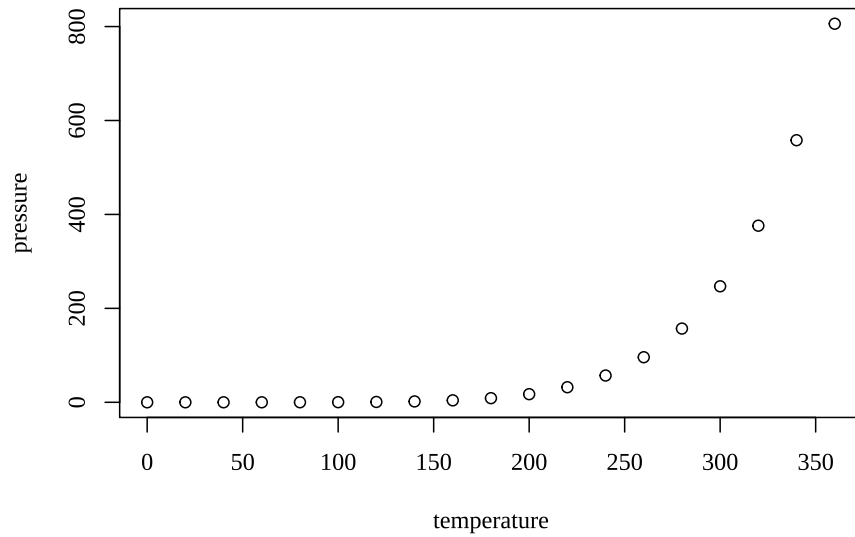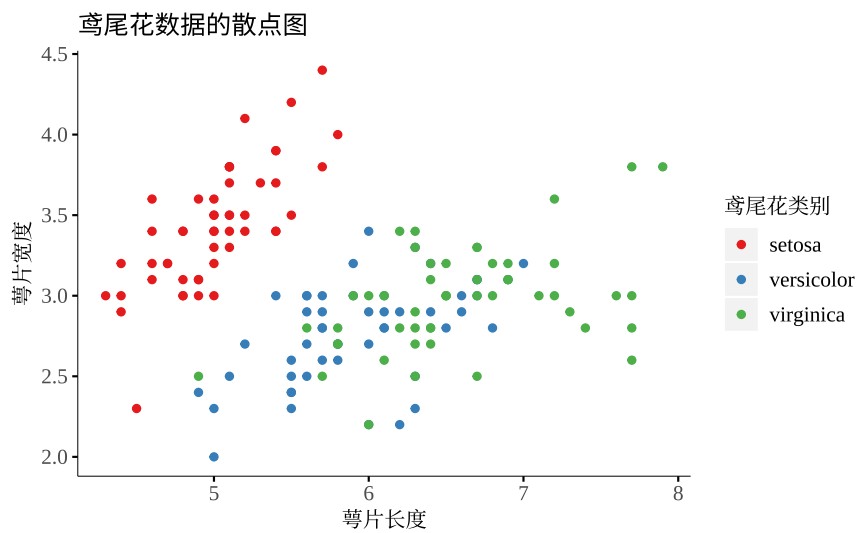
图 1: 西文衬线字体

1.2 英文

```r
op <- par(family = "serif", mar = c(4, 4, .5, .5))
plot(pressure)
par(op)
```

```r
library(showtext)
showtext_auto()
cairo_pdf(file = "demo_times.pdf", width = 8, height = 7, pointsize = 16)
pdf(file = "demo_times.pdf", width = 8, height = 7, pointsize = 16)
op <- par(mar = c(4, 4, .5, .5))
```
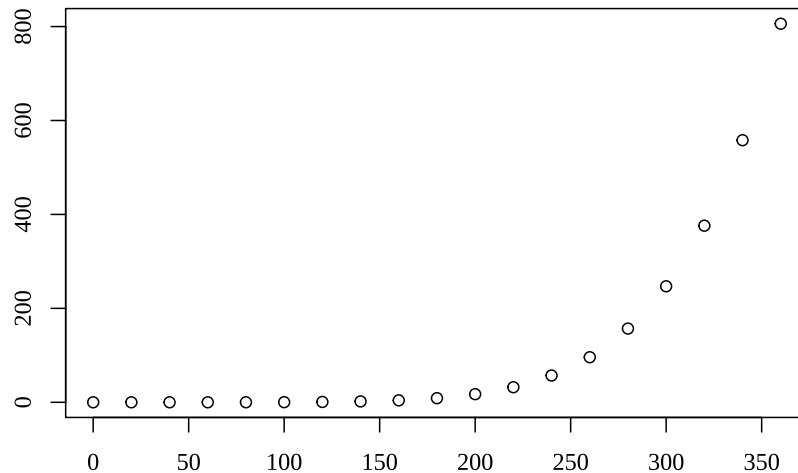
图 2: Times New Roman 字体

```r
plot(pressure, xlab = "", ylab = "", family = "Times") # Times
# plot(pressure, xlab = "", ylab = "", family = "sans") # arial
title(xlab = "温度", ylab = "压力", family = "source-han-serif-cn")
par(op)
dev.off()
```

```r
op <- par(mar = c(4, 4, .5, .5))
plot(pressure, xlab = "", ylab = "", family = "serif") # Times
par(op)
```

pdf 设备可用字体

```r
names(pdfFonts())
#>  [1] "serif"              "sans"               "mono"
#>  [4] "AvantGarde"         "Bookman"            "Courier"
#>  [7] "Helvetica"          "Helvetica-Narrow"   "NewCenturySchoolbook"
#> [10] "Palatino"           "Times"              "URWGothic"
#> [13] "URWBookman"         "NimbusMon"          "NimbusSan"
#> [16] "URWHelvetica"       "NimbusSanCond"      "CenturySch"
#> [19] "URWPalladio"        "NimbusRom"          "URWTimes"
#> [22] "ArialMT"            "Japan1"             "Japan1HeiMin"
#> [25] "Japan1GothicBBB"    "Japan1Ryumin"       "Korea1"
#> [28] "Korea1deb"          "CNS1"               "GB1"
```

- https://github.com/wch/fontcm
- https://github.com/wch/extrafont