

kableExtra 在 bookdown 项目中的使用

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第一章 表格

这是一个稍微复杂一点的经典表格样式，常出现在论文或期刊的数值模拟比较部分¹

```
library(kableExtra)
db <- mtcars[, 1:7] %>%
  transform(Methods = rownames(.)) %>%
  `colnames<-`(`(.`, value = c(rep(c("Bias", "RMSE"), 3), "", "Methods"))

kable(db,
  format = "latex", booktabs = TRUE, escape = T, row.names = F,
  longtable = T, caption = " 第 1 种类型的统计表格样式",
  linesep = c("", "", "", "", "", "\\midrule")
) %>%
  kable_styling(
    latex_options = c("hold_position", "repeat_header"),
    full_width = F, position = "center", repeat_header_method = "replace",
    repeat_header_text = " 续表 @ref(tab:kableExtra-latex)"
  ) %>%
  add_header_above(c(
    "$\\\\sigma^2$" = 2, "$\\\\phi$" = 2,
    "$\\\\tau^2$" = 2, "$r=\\\\delta/\\\\phi$" = 1, " "
  ), escape = F) %>%
  footnote(
    general_title = " 注: ", title_format = "italic", threeparttable = T,
```

¹<https://arxiv.org/abs/1711.00437>

```

general = "* 星号表示的内容可以很长"
)

```

表 1.1: 第 1 种类型的统计表格样式

σ^2		ϕ		τ^2		$r = \delta/\phi$	Methods
Bias	RMSE	Bias	RMSE	Bias	RMSE		
21.0	6	160.0	110	3.90	2.620	16.46	Mazda RX4
21.0	6	160.0	110	3.90	2.875	17.02	Mazda RX4 Wag
22.8	4	108.0	93	3.85	2.320	18.61	Datsun 710
21.4	6	258.0	110	3.08	3.215	19.44	Hornet 4 Drive
18.7	8	360.0	175	3.15	3.440	17.02	Hornet Sportabout
18.1	6	225.0	105	2.76	3.460	20.22	Valiant
14.3	8	360.0	245	3.21	3.570	15.84	Duster 360
24.4	4	146.7	62	3.69	3.190	20.00	Merc 240D
22.8	4	140.8	95	3.92	3.150	22.90	Merc 230
19.2	6	167.6	123	3.92	3.440	18.30	Merc 280
17.8	6	167.6	123	3.92	3.440	18.90	Merc 280C
16.4	8	275.8	180	3.07	4.070	17.40	Merc 450SE
17.3	8	275.8	180	3.07	3.730	17.60	Merc 450SL
15.2	8	275.8	180	3.07	3.780	18.00	Merc 450SLC
10.4	8	472.0	205	2.93	5.250	17.98	Cadillac Fleetwood
10.4	8	460.0	215	3.00	5.424	17.82	Lincoln Continental
14.7	8	440.0	230	3.23	5.345	17.42	Chrysler Imperial
32.4	4	78.7	66	4.08	2.200	19.47	Fiat 128
30.4	4	75.7	52	4.93	1.615	18.52	Honda Civic
33.9	4	71.1	65	4.22	1.835	19.90	Toyota Corolla
21.5	4	120.1	97	3.70	2.465	20.01	Toyota Corona
15.5	8	318.0	150	2.76	3.520	16.87	Dodge Challenger
15.2	8	304.0	150	3.15	3.435	17.30	AMC Javelin
13.3	8	350.0	245	3.73	3.840	15.41	Camaro Z28
19.2	8	400.0	175	3.08	3.845	17.05	Pontiac Firebird

表 1.1: 续表1.1

Bias	RMSE	Bias	RMSE	Bias	RMSE		Methods
27.3	4	79.0	66	4.08	1.935	18.90	Fiat X1-9
26.0	4	120.3	91	4.43	2.140	16.70	Porsche 914-2
30.4	4	95.1	113	3.77	1.513	16.90	Lotus Europa
15.8	8	351.0	264	4.22	3.170	14.50	Ford Pantera L
19.7	6	145.0	175	3.62	2.770	15.50	Ferrari Dino
15.0	8	301.0	335	3.54	3.570	14.60	Maserati Bora
21.4	4	121.0	109	4.11	2.780	18.60	Volvo 142E

注：

* 星号表示的内容可以很长

- `striped` 默认使用浅灰色，`stripe_color` 可以用来指定颜色 `stripe_color="white"`，它只在 LaTeX 下工作，HTML 下更改颜色需要设置 CSS，可以不使用 `striped` 改变默认的底设置
- `threeparttable = TRUE` 处理超长的注解标记，
- `add_header_above` 函数内的 `escape = F` 用来处理数学公式，
- `longtable = T` 表格很长时需要分页，因此使用续表，
- `hold_position` 使用了 `[!h]` 控制浮动
- 对于数学符号前要四个反斜杠这一点，作者今后可能会改变，只需要两个反斜杠，与 HTML 格式表格保持一致 <https://github.com/haozhu233/kableExtra/issues/120>
- 对某些数据用不同颜色高亮 Selecting and colouring single table cells with `kableExtra` in R markdown `cell_spec` <https://stackoverflow.com/questions/50118394>

1.1 Pandoc 支持的表格

其实 Pandoc's Markdown 本身也支持不少表格样式²，比如常见的简单表格样式，如表 1.2 和表 1.3

表 1.2: 简单表格语法展示

Right	Left	Center	Default
12	12	12	12
123	123	123	123
1	1	1	1

再来一个表格

表 1.3: 表格标题可以含有脚注³

First Header	Second Header
Content Cell	Content Cell
Content Cell	Content Cell

1.2 软件信息

```
sessionInfo(.packages(T))
```

```
## R version 4.0.2 (2020-06-22)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Ubuntu 16.04.6 LTS
##
## Matrix products: default
```

²<https://pandoc.org/MANUAL.html#tables>

³附有一个简短的脚注


```

## BLAS: /usr/lib/openblas-base/libblas.so.3
## LAPACK: /usr/lib/libopenblas-r0.2.18.so
##
## locale:
## [1] LC_CTYPE=en_US.UTF-8 LC_NUMERIC=C
## [3] LC_TIME=en_US.UTF-8 LC_COLLATE=en_US.UTF-8
## [5] LC_MONETARY=en_US.UTF-8 LC_MESSAGES=en_US.UTF-8
## [7] LC_PAPER=en_US.UTF-8 LC_NAME=C
## [9] LC_ADDRESS=C LC_TELEPHONE=C
## [11] LC_MEASUREMENT=en_US.UTF-8 LC_IDENTIFICATION=C
##
## attached base packages:
## [1] base compiler datasets graphics grDevices grid methods
## [8] parallel splines stats stats4 tcltk tools utils
##
## other attached packages:
## [1] askpass_1.1 base64enc_0.1-3 bookdown_0.20 callr_3.4.4
## [5] colorspace_1.4-1 curl_4.3 digest_0.6.25 evaluate_0.14
## [9] farver_2.0.3 glue_1.4.2 highr_0.8 htmltools_0.5.0
## [13] httr_1.4.2 jsonlite_1.7.1 kableExtra_1.2.1 knitr_1.30
## [17] labeling_0.3 lifecycle_0.2.0 magrittr_1.5 markdown_1.1
## [21] mime_0.9 munsell_0.5.0 openssl_1.4.3 processx_3.4.4
## [25] ps_1.3.4 R6_2.4.1 RColorBrewer_1.1-2 remotes_2.2.0
## [29] rlang_0.4.7 rmarkdown_2.3 rstudioapi_0.11 rvest_0.3.6
## [33] scales_1.1.1 selectr_0.4-2 stringi_1.5.3 stringr_1.4.0
## [37] sys_3.4 tinytex_0.26 viridisLite_0.3.0 webshot_0.5.2
## [41] xfun_0.17 xml2_1.3.2 yaml_2.2.1 boot_1.3-25
## [45] class_7.3-17 cluster_2.1.0 codetools_0.2-16 foreign_0.8-80
## [49] KernSmooth_2.23-17 lattice_0.20-41 MASS_7.3-51.6 Matrix_1.2-18
## [53] mgcv_1.8-31 nlme_3.1-148 nnet_7.3-14 rpart_4.1-15
## [57] spatial_7.3-12 survival_3.1-12

```