空间广义线性模型

代码实现

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摘要

hello

1 引言

1.1 模型

$$f(x) = \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.
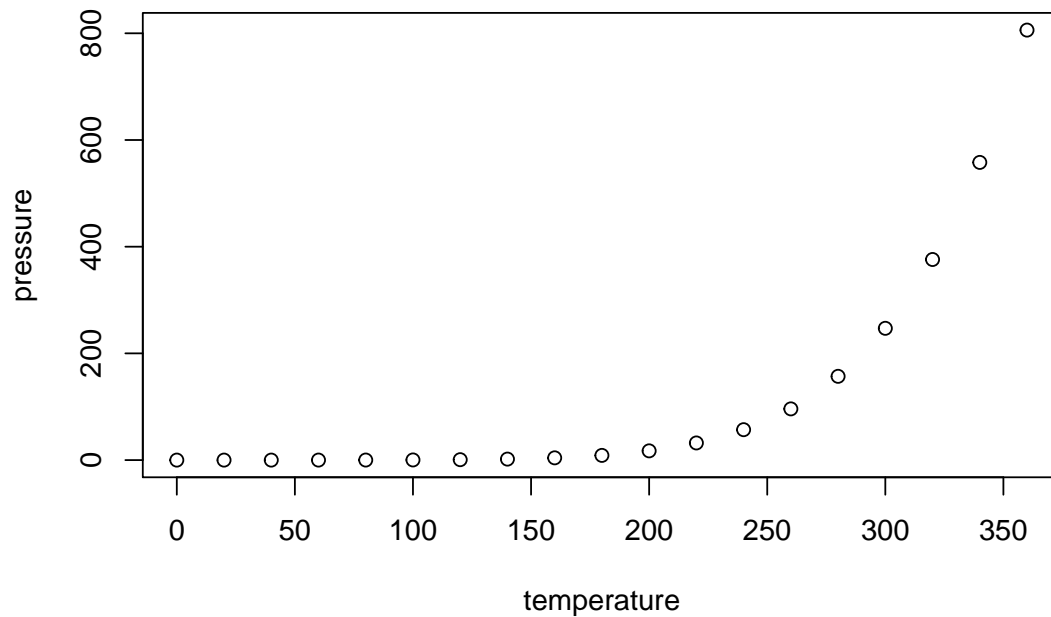
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed           dist
##  Min.   : 4.0   Min.   :  2.00
##  1st Qu.:12.0   1st Qu.: 26.00
##  Median :15.0   Median : 36.00
##  Mean   :15.4   Mean   : 42.98
##  3rd Qu.:19.0   3rd Qu.: 56.00
##  Max.   :25.0   Max.   :120.00
```

1.2 Including Plots

You can also embed plots, for example:

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.[1]

```
Sys.which("gcc")
```

```
##                                                    gcc
## "c:\\Rtools\\mingw_64\\bin\\gcc.exe"
```

```
system("gcc --version")
```

```
## gcc.exe (x86_64-posix-seh, Built by MinGW-W64 project) 4.9.3
## Copyright (C) 2015 Free Software Foundation, Inc.
## This is free software; see the source for copying conditions.  There is NO
## warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

```
system("g++ --version")
```

```
## G__~1.EXE (x86_64-posix-seh, Built by MinGW-W64 project) 4.9.3
```

```r
system2("g++", args = "-v", stderr = TRUE)
```

```
## Using built-in specs.
## COLLECT_GCC=c:\Rtools\mingw_64\bin\G__~1.EXE
##   COLLECT_LTO_WRAPPER=c:/Rtools/mingw_64/bin/../libexec/gcc/x86_64-
w64-mingw32/4.9.3/lto-wrapper.exe
## Target: x86_64-w64-mingw32
##  Configured  with:  ../../../src/gcc-4.9.3/configure  --host=x86_64-
w64-mingw32  --build=x86_64-w64-mingw32  --target=x86_64-w64-mingw32  -
-prefix=/mingw64   --with-sysroot=/home/Jeroen/mingw-gcc-4.9.3/x86_64-
493-posix-seh-rt_v3-s/mingw64  --with-gxx-include-dir=/mingw64/x86_64-
w64-mingw32/include/c++  --enable-static  --disable-shared  --disable-
multilib   --enable-languages=c,c++,fortran,lto   --enable-libstdcxx-
time=yes --enable-threads=posix --enable-libgomp --enable-libatomic -
-enable-lto  --enable-graphite  --enable-checking=release  --enable-
fully-dynamic-string    --enable-version-specific-runtime-libs    --
disable-isl-version-check  --disable-cloog-version-check  --disable-
libstdcxx-pch   --disable-libstdcxx-debug   --enable-bootstrap   --
disable-rpath   --disable-win32-registry   --disable-nls   --disable-
werror   --disable-symvers   --with-gnu-as   --with-gnu-ld   --with-
arch=nocona  --with-tune=core2  --with-libiconv  --with-system-zlib  -
-with-gmp=/home/Jeroen/mingw-gcc-4.9.3/prerequisites/x86_64-w64-
mingw32-static --with-mpfr=/home/Jeroen/mingw-gcc-4.9.3/prerequisites/x86_64-
w64-mingw32-static --with-mpc=/home/Jeroen/mingw-gcc-4.9.3/prerequisites/x86_64-
w64-mingw32-static --with-isl=/home/Jeroen/mingw-gcc-4.9.3/prerequisites/x86_64-
w64-mingw32-static --with-cloog=/home/Jeroen/mingw-gcc-4.9.3/prerequisites/x86_64-
w64-mingw32-static --enable-cloog-backend=isl --with-pkgversion='x86_64-
posix-seh, Built by MinGW-W64 project' --with-bugurl=http://sourceforge.net/projects/r
w64   CFLAGS='-O2   -pipe   -I/home/Jeroen/mingw-gcc-4.9.3/x86_64-493-
posix-seh-rt_v3-s/mingw64/opt/include       -I/home/Jeroen/mingw-gcc-
4.9.3/prerequisites/x86_64-zlib-static/include   -I/home/Jeroen/mingw-
gcc-4.9.3/prerequisites/x86_64-w64-mingw32-static/include' CXXFLAGS='-
O2   -pipe   -I/home/Jeroen/mingw-gcc-4.9.3/x86_64-493-posix-seh-rt_v3-
```
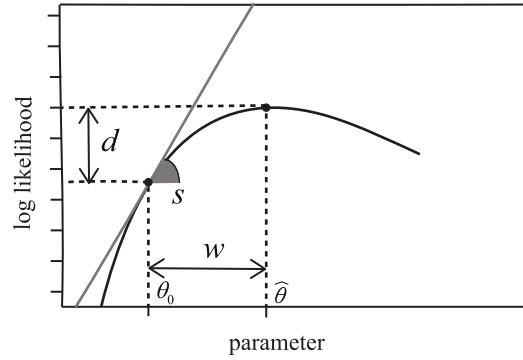
图 1: 未优化

```
s/mingw64/opt/include -I/home/Jeroen/mingw-gcc-4.9.3/prerequisites/x86_64-
zlib-static/include -I/home/Jeroen/mingw-gcc-4.9.3/prerequisites/x86_64-
w64-mingw32-static/include' CPPFLAGS= LDFLAGS='-pipe -L/home/Jeroen/mingw-
gcc-4.9.3/x86_64-493-posix-seh-rt_v3-s/mingw64/opt/lib -L/home/Jeroen/mingw-
gcc-4.9.3/prerequisites/x86_64-zlib-static/lib   -L/home/Jeroen/mingw-
gcc-4.9.3/prerequisites/x86_64-w64-mingw32-static/lib '
## Thread model: posix
## gcc version 4.9.3 (x86_64-posix-seh, Built by MinGW-W64 project)
```

插入图片

```
knitr::include_graphics(path = "fig.pdf")
```

参考文献

[1] H. Rue, A. I. Riebler, S. H. Sørbye, J. B. Illian, D. P. Simpson, and F. K. Lind-
     gren. Bayesian computing with INLA: A review. Annual Reviews of Statistics
     and Its Applications, 4(1):395–421, 2017.