Two-compartment model solved using Torsten's `pmx_solve_twocpt` function

Yi Zhang

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1 Model

We consider fitting a single-patient two-compartment model with linear absorption, to demonstrate the usage of `pmx_solve_twocpt` function.

2 Build

In `Torsten/cmdstan` path

```
make ../example-models/twocpt_model/twocpt_model
```

3 Run

In model path

```
for i in {1..4}; do ./twocpt_model sample random seed=3892749 id=$i data
 ↪  file=TwoCptModel.data.R init=TwoCptModel.init.R output
 ↪  file=output_$i.csv; done
```

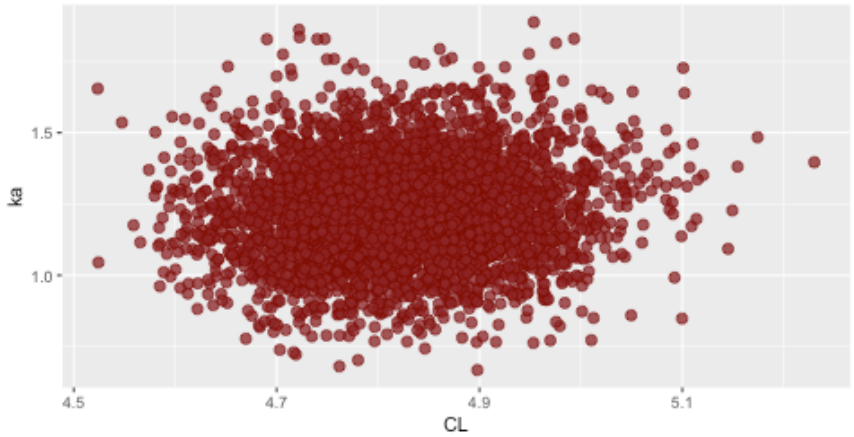
4 Results

`./result/` directory contains Stan output from the above run. To examine the results in `R`, we use `bayesplot` and `rstan`

```
library(bayesplot)
library(rstan)
fit <- read_stan_csv(list.files(path="result", pattern="*.csv",
 ↪  full.names=TRUE))
```

4.1 Scatter plot diagnostic

```
mcmc_scatter(as.matrix(fit), pars = c("CL", "ka"), np = nuts_params(fit),
             np_style = scatter_style_np(div_color = "green", div_alpha =
              ↪  0.8))
```



4.2 Energy plot diagnostic

```
color_scheme_set("red");
np <- nuts_params(fit);
mcmc_nuts_energy(np) + ggtitle("NUTS Energy Diagnostic")
```