```r
# Monte Carlo confidence intervals using MI estimates ---------------------------
## Multiple imputation (m = 100 imputations)
library(mice)
mi <- mice(data = data, m = 100L, method = "norm", print = FALSE)
## Step 1: Model Fitting
library(lavaan)
model <- "Y ~ cp * X + b * M
          M ~ a * X
          X ~~ X
          ab := a * b"
fit <- sem(model = model, data = data)
## Step 2: Monte Carlo CIs
library(semmcci)
MCMI(fit, mi = mi, alpha = 0.05)
#> Monte Carlo Confidence Intervals (Multiple Imputation Estimates)
#>          est     se     R   2.5%  97.5%
#> cp    0.2330 0.0300 20000 0.1751 0.2917
#> b     0.5113 0.0293 20000 0.4537 0.5684
#> a     0.4813 0.0284 20000 0.4256 0.5370
#> X~~X  1.0613 0.0499 20000 0.9638 1.1585
#> Y~~Y  0.5534 0.0269 20000 0.5016 0.6073
#> M~~M  0.7571 0.0354 20000 0.6878 0.8265
#> ab    0.2461 0.0204 20000 0.2073 0.2868
```