```r
# Monte Carlo confidence intervals using FIML estimates ------------------------
## 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, missing = "fiml")
## Step 2: Monte Carlo CIs
library(semmcci)
MC(fit, alpha = 0.05)
#> Monte Carlo Confidence Intervals
#>          est     se     R    2.5%  97.5%
#> cp    0.2335 0.0292 20000  0.1763 0.2908
#> b     0.5113 0.0296 20000  0.4527 0.5684
#> a     0.4809 0.0284 20000  0.4255 0.5369
#> X~~X  1.0591 0.0496 20000  0.9627 1.1560
#> Y~~Y  0.5542 0.0266 20000  0.5030 0.6071
#> M~~M  0.7564 0.0360 20000  0.6853 0.8263
#> Y~1  -0.0127 0.0252 20000 -0.0617 0.0366
#> M~1  -0.0223 0.0291 20000 -0.0786 0.0353
#> X~1   0.0025 0.0337 20000 -0.0643 0.0681
#> ab    0.2458 0.0202 20000  0.2074 0.2867
```