Define the model

```
model = @model begin
  @param   begin
    tvcl ∈ RealDomain(lower=0, init = 4.0)
    tvv ∈ RealDomain(lower=0, init = 70)
    pmoncl ∈ RealDomain(lower = -0.99, init= -0.7)
    Ω ∈ PDiagDomain(init=[0.09,0.09])
    σ_prop ∈ RealDomain(lower=0,init=0.04)
  end

  @random begin
    η ~ MvNormal(Ω)
  end

  @pre begin
    CL = tvcl * (1 + pmoncl*isPM) * (wt/70)^0.75 * exp(η[1])
    V  = tvv * (wt/70) * exp(η[2])
  end
  @covariates wt isPM

  @dynamics ImmediateAbsorptionModel
    #@dynamics begin
    #    Central' =  - (CL/V)*Central
    #end

  @derived begin
      cp = @. 1000*(Central / V)
      dv ~ @. Normal(cp, sqrt(cp^2*σ_prop))
    end
end
```

Read the data

```
julia> data = read_pumas(simdf,cvs=[:isPM, :wt])
Population
  Subjects: 10
  Covariates: isPM, wt
  Observables: dv
```

Use this data to estimate the parameters of our model.

```
julia> res = fit(model,data,param,Pumas.FOCEI())
FittedPumasModel

Successful minimization:                      true

Likelihood approximation:            Pumas.FOCEI
Objective function value:                 8084.54
Total number of observation records:         1210
Number of active observation records:        1210
Number of subjects:                            10

-----------------
       Estimate
-----------------
tvcl     4.8809
tvv      89.739
pmoncl  -0.73558
Ω₁,₁     0.10822
Ω₂,₂     0.051508
σ_prop   0.042149
-----------------
```

https://docs.pumas.ai/dev/basics/estimation/#Maximum-Likelihood-Estimation-1
https://docs.pumas.ai/dev/basics/estimation/#Bayesian-Estimation-1