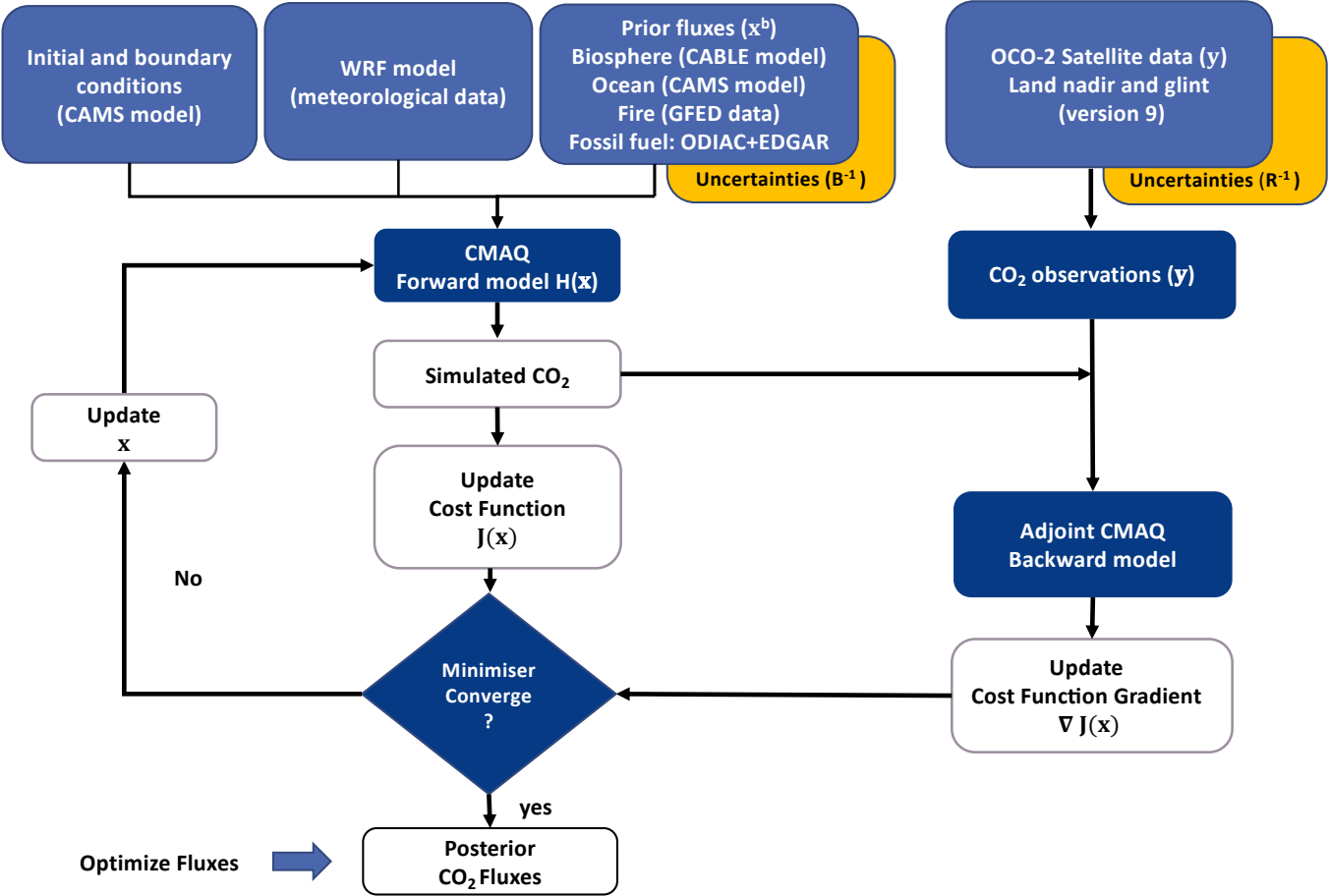
Initial and boundary conditions (CAMS model)
WRF model (meteorological data)
Prior fluxes (x^b)
Biosphere (CABLE model)
Ocean (CAMS model)
Fire (GFED data)
Fossil fuel: ODIAC+EDGAR
Uncertainties (B^{-1})
OCO-2 Satellite data (y)
Land nadir and glint
(version 9)
Uncertainties (R^{-1})
CMAQ
Forward model H(x)
CO_2 observations (y)
Simulated CO_2
Update
x
Update
Cost Function
J(x)
Adjoint CMAQ
Backward model
No
Minimiser
Converge
?
Update
Cost Function Gradient
∇ J(x)
yes
Optimize Fluxes
Posterior
CO_2 Fluxes