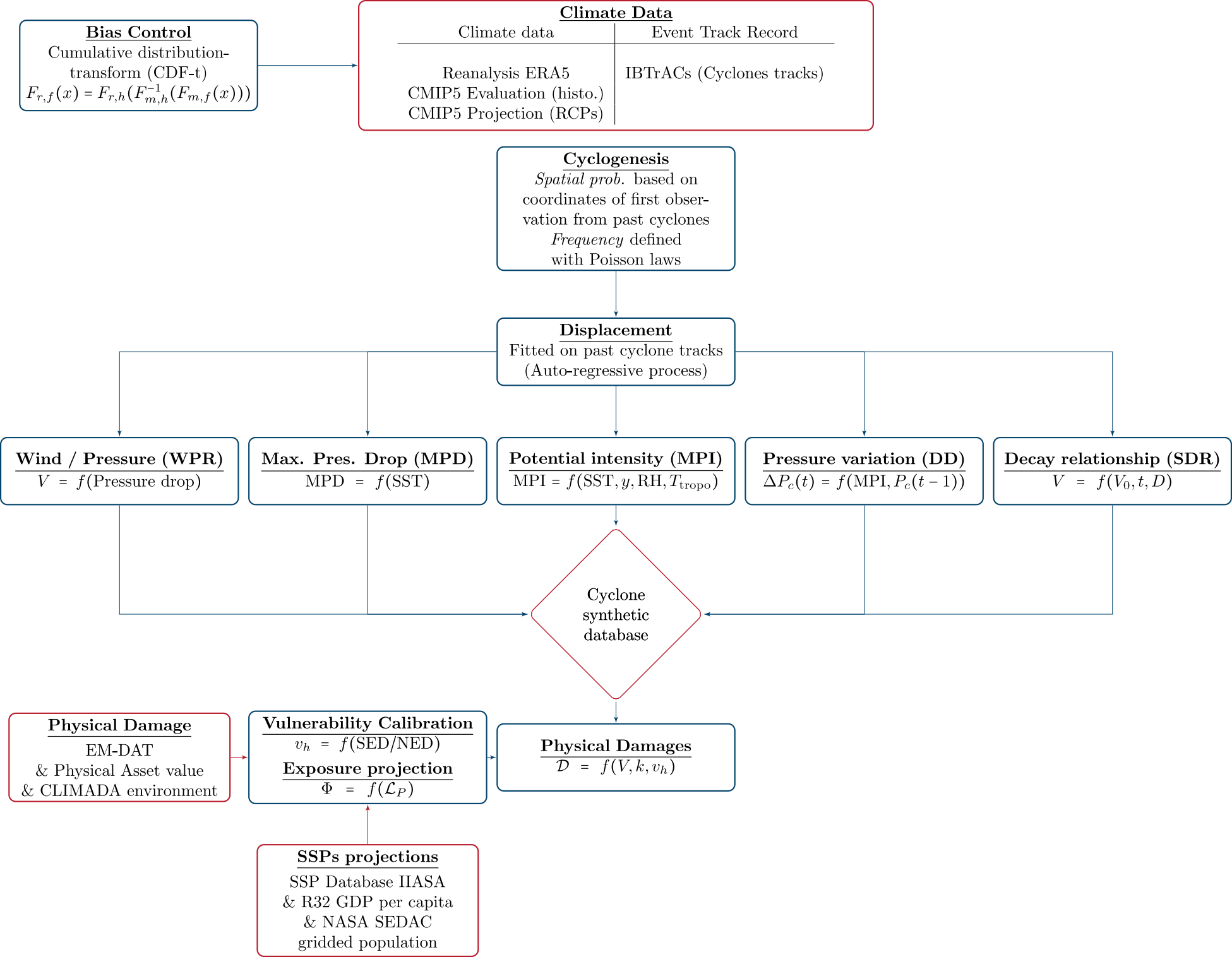
Bias Control
Cumulative distribution-transform (CDF-t)
$F_{r,f}(x) = F_{r,h}(F^{-1}_{m,h}(F_{m,f}(x)))$
Climate Data
Climate data
Event Track Record
Reanalysis ERA5
CMIP5 Evaluation (histo.)
CMIP5 Projection (RCPs)
IBTrACs (Cyclones tracks)
Cyclogenesis
Spatial prob. based on coordinates of first observation from past cyclones
Frequency defined with Poisson laws
Displacement
Fitted on past cyclone tracks (Auto-regressive process)
Wind / Pressure (WPR)
$V = f(\text{Pressure drop})$
Max. Pres. Drop (MPD)
$\text{MPD} = f(\text{SST})$
Potential intensity (MPI)
$\text{MPI} = f(\text{SST}, y, \text{RH}, T_{\text{tropo}})$
Pressure variation (DD)
$\Delta P_c(t) = f(\text{MPI}, P_c(t-1))$
Decay relationship (SDR)
$V = f(V_0, t, D)$
Cyclone synthetic database
Physical Damage
EM-DAT
& Physical Asset value
& CLIMADA environment
Vulnerability Calibration
$v_h = f(\text{SED/NED})$
Exposure projection
$\Phi = f(\mathcal{L}_P)$
Physical Damages
$\mathcal{D} = f(V, k, v_h)$
SSPs projections
SSP Database IIASA
& R32 GDP per capita
& NASA SEDAC
gridded population