If exchange replica then
\( \theta_2 \leftarrow \theta_1 \)
Inter-process communication

Wait for all processes (replicas) to sample as defined by swap interval
\( \theta_M \leftarrow \theta_{M-1} \)
Inter-process communication

If exchange replica then

Process 1

\( T_1 \theta_1 \)
Badlands or surrogate
Replica sampler

If surrogate interval then
send replica surrogate training data
Inter-process communication

Pass knowledge for replica surrogate model

If surrogate interval then
send replica surrogate training data
Inter-process communication

Collect surrogate training data

Train surrogate model

Process 2

\( T_2 \theta_2 \)
Badlands or surrogate
Replica sampler

If surrogate interval then
send replica surrogate training data
Inter-process communication

Pass knowledge for replica surrogate model

Process N

\( T_N \theta_M \)
Badlands or surrogate
Replica sampler

If surrogate interval then
send replica surrogate training data
Inter-process communication

If exchange replica then

Repeat until convergence

MASTER PROCESS