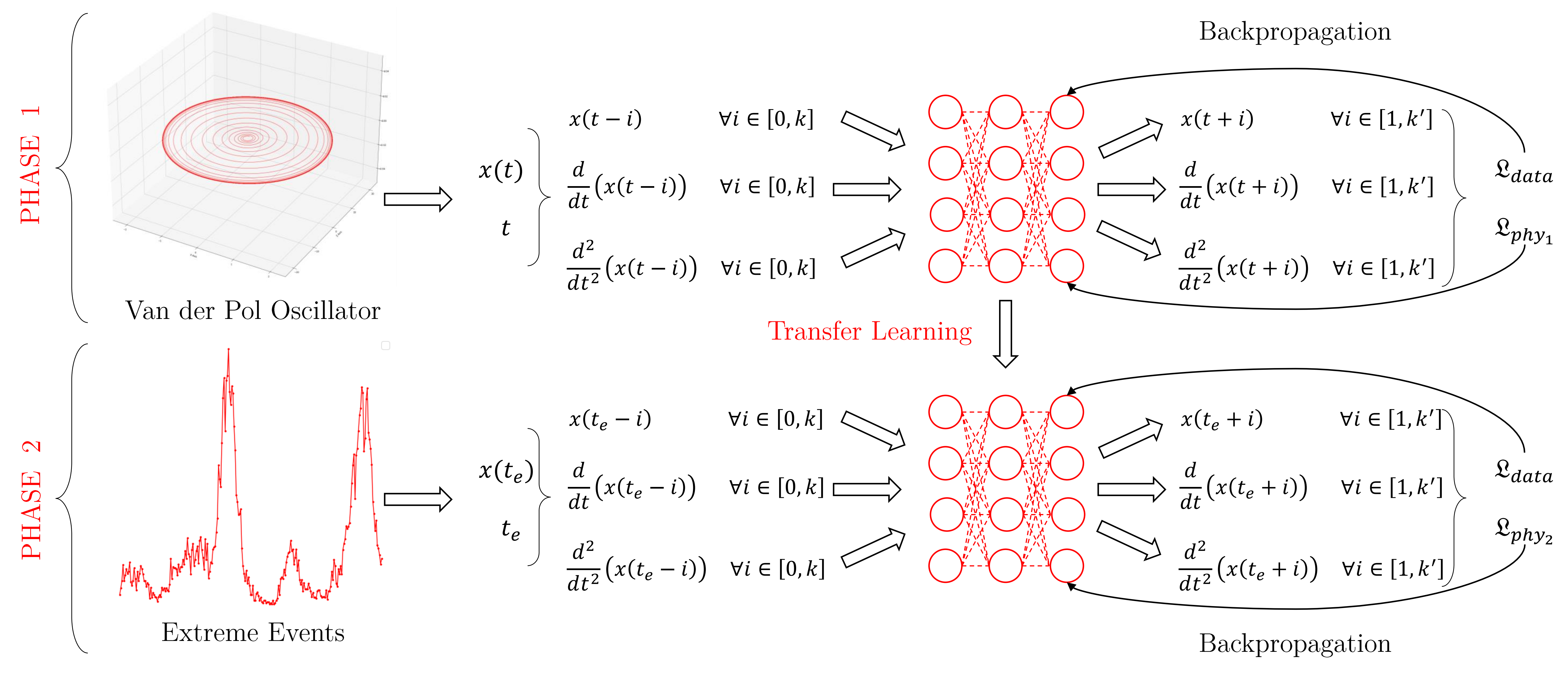

PHASE 1
Van der Pol Oscillator
$x(t)$
t
$x(t-i) \quad \forall i \in [0,k]$
$\frac{d}{dt}(x(t-i)) \quad \forall i \in [0,k]$
$\frac{d^2}{dt^2}(x(t-i)) \quad \forall i \in [0,k]$
$x(t+i) \quad \forall i \in [1,k']$
$\frac{d}{dt}(x(t+i)) \quad \forall i \in [1,k']$
$\frac{d^2}{dt^2}(x(t+i)) \quad \forall i \in [1,k']$
$\mathfrak{L}_{data}$
$\mathfrak{L}_{phy_1}$
Backpropagation
Transfer Learning
PHASE 2
Extreme Events
$x(t_e)$
t_e
$x(t_e-i) \quad \forall i \in [0,k]$
$\frac{d}{dt}(x(t_e-i)) \quad \forall i \in [0,k]$
$\frac{d^2}{dt^2}(x(t_e-i)) \quad \forall i \in [0,k]$
$x(t_e+i) \quad \forall i \in [1,k']$
$\frac{d}{dt}(x(t_e+i)) \quad \forall i \in [1,k']$
$\frac{d^2}{dt^2}(x(t_e+i)) \quad \forall i \in [1,k']$
$\mathfrak{L}_{data}$
$\mathfrak{L}_{phy_2}$
Backpropagation