

$\{V_i(t), t \in [0, T]\}'s$

**Rate and state friction:**

$$f^{RS} = f_* + a \log \left( \frac{V}{V_*} \right) + b \log \left( \frac{V_* \theta}{D_{RS}} \right)$$

$\{f_i^{RS}(t), t \in [0, T]\}'s$

**Potential-formulated friction:**

$$f^{NN} = \frac{\partial W_{NN}(x; w_W)}{\partial x} + \frac{\partial D_{NN}^+(\dot{x}, \xi; w_{D^+})}{\partial \dot{x}}$$

$\{f_i^{NN}(t), t \in [0, T]\}'s$