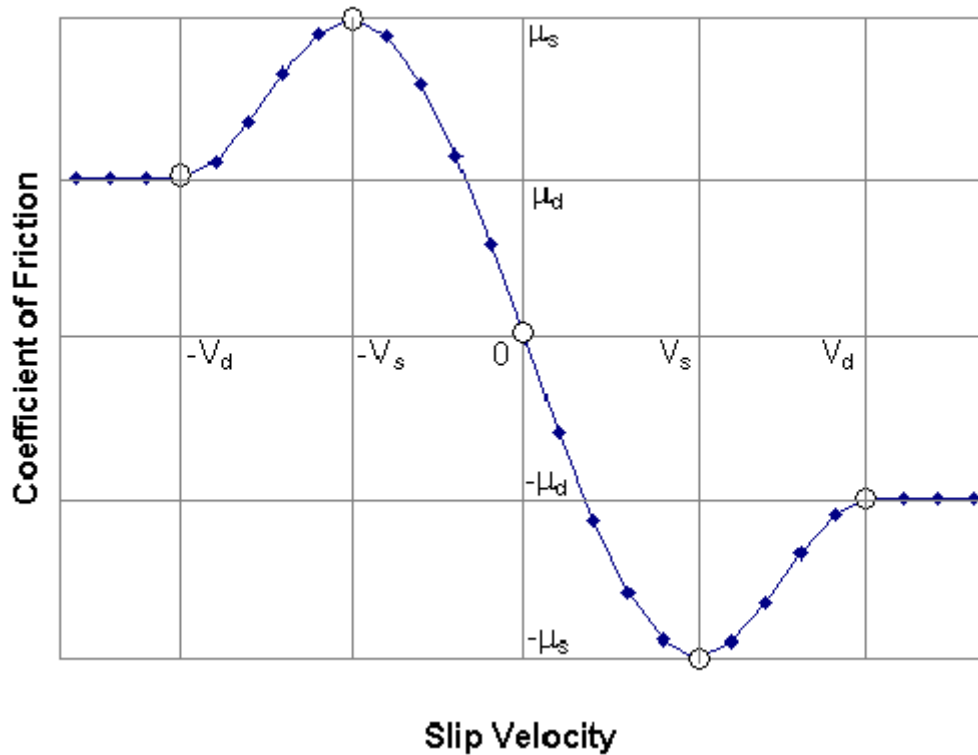


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## Contact Friction Force Calculation

ADAMS/Solver uses a relatively simple velocity-based friction model for contacts. Specifying the frictional behavior is optional. The figure below shows how the coefficient of friction varies with slip velocity.

Coefficient of Friction Varying with Slip Velocity



In this simple model:

- $\mu(-v_s) = \mu_s$
- $\mu(v_s) = -\mu_s$
- $\mu(0) = 0$
- $\mu(-v_d) = \mu_d$
- $\mu(v_d) = -\mu_d$
- $\mu(v) = -\text{sign}(v) \cdot \mu_d$  for  $|v| > v_d$
- $\mu(v) = -\text{step}(|v|, v_d, \mu_d, v_s, \mu_s) \cdot \text{sign}(v)$  for  $v_s \leq |v| \leq v_d$
- $\mu(v) = \text{step}(v, -v_s, \mu_s, v_s, -\mu_s)$  for  $-v_s < v < v_s$

where:

$v$ : Slip velocity at contact point

$v_s$ : STICTION\_TRANSITION\_VELOCITY

$v_d$ : FRICTION\_TRANSITION\_VELOCITY

$\mu_s$ : MU\_STATIC

$\mu_d$ : MU\_DYNAMIC

[Learn more about contacts.](#)