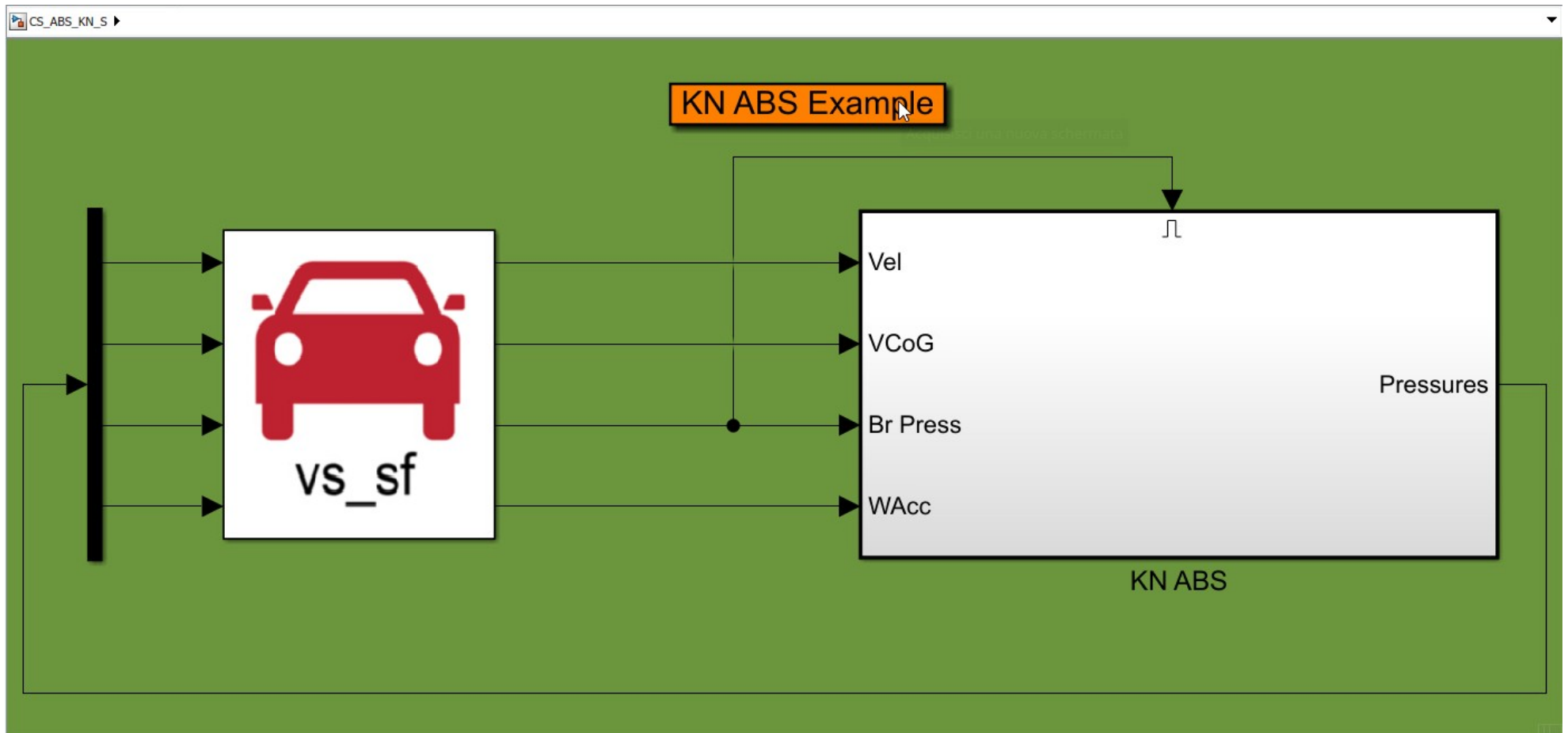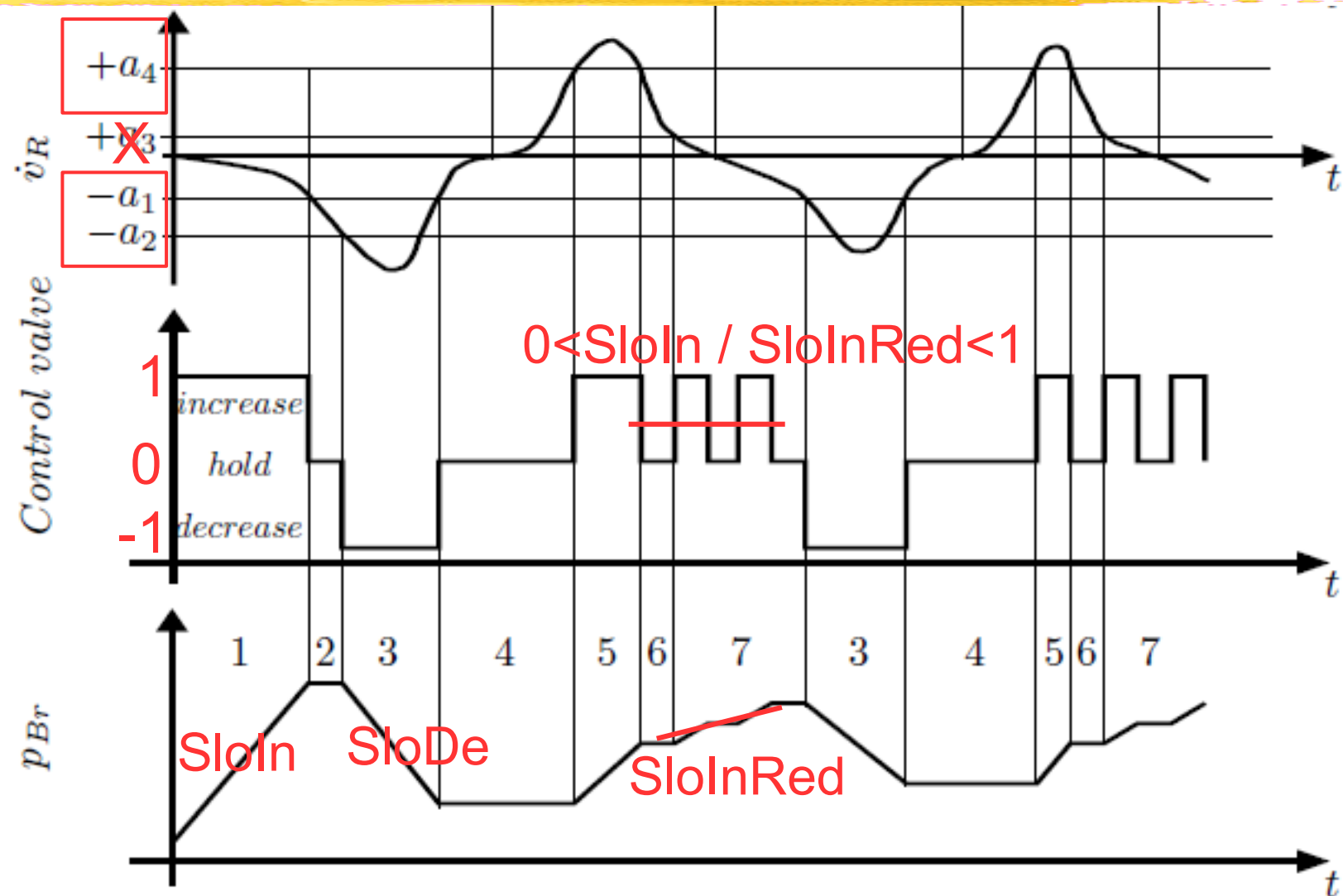# Automotive Control Systems

KN ABS control implementation in CarSim 2019.0

- References:
  - Files *CS_ABS_KN_S.slx* and *CS_ABS_KN.m*

ABS Simulink scheme

ABS parameters

ABS parameters

- Parameters to be tuned:
  - Thresholds a1, a2 and a4 (a3 is not used), such that a2<a1<0<a4, in rad/s^2
  - The slopes of the increasing, SloIn, decreasing, SloDe, and reduced increasing, SloInRed pressures in Mpa/s

ABS critical situations

- Critical cases additional constraint

$$\text{if } v_R < \left(1 - s_{L,max}\right) v_W \text{ then decrease } p_{Br}$$

- Parameter to be tuned:

  - The value of the slip $s_{L,max}$ corresponding to the maximum friction, such that $s_{L,max} > 0$