

ENTERING  
Rising Feedrate Section

TANGENTIAL ACCELERATION CALCULATIONS  
Calculate  $\min\_tang\_accn(u)$   
Calculate  $\min\_tang\_accn(u)$

FEEDRATE LIMIT CALCULATIONS  
Calculate  $\text{curr\_frate\_limit}(u)$  based on  
the 4 limit constraints.

CURRENT FEEDRATE CALCULATIONS  
Transform parameter  $(u)$  to  $(rsu)$   
Calculate  $\text{curr\_frate}(u)$  using rising S-Curve( $rsu$ )  
Calculate  $\text{next\_tang\_accn}(u)$

UPDATE VARIABLES  
Set  $\text{curr\_frate}(u) = \text{next\_frate}(u)$ ;  
Set  $\text{curr\_tang\_accn}(u) = \text{next\_tang\_accn}(u)$

COMPARE ACCN FOR MAXIMUM  
 $\text{next\_tang\_accn}(u) > \max\_tang\_accn(u)$ ?

Yes

$\text{next\_tang\_accn}(u) = \max\_tang\_accn(u)$

No

COMPARE ACCN FOR MINIMUM  
 $\text{next\_tang\_accn}(u) < \min\_tang\_accn(u)$ ?

Yes

$\text{next\_tang\_accn}(u) = \min\_tang\_accn(u)$

No

UPDATE VALUES FOR NEXT CYCLE  
 $\text{curr\_frate}(u) = \text{next\_frate}(u)$   
 $\text{curr\_tang\_accn}(u) = \text{next\_tang\_accn}(u)$

EXITING  
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