

Let the top and bottom of the curved line approach

the vortex sheet; i.e., let $dn \rightarrow 0$.

$$\therefore \int ds = (u_1 - u_2) ds$$

$$\boxed{\Gamma = u_1 - u_2}$$

It states that the local jump in tangential velocity across the vortex sheet is equal to the local sheet strength.

$$\Gamma_{(TE)} = \Gamma_{(a)} = v_1 - v_2$$

At the T-E :

for finite T-E ; $v_1 = v_2 = 0$

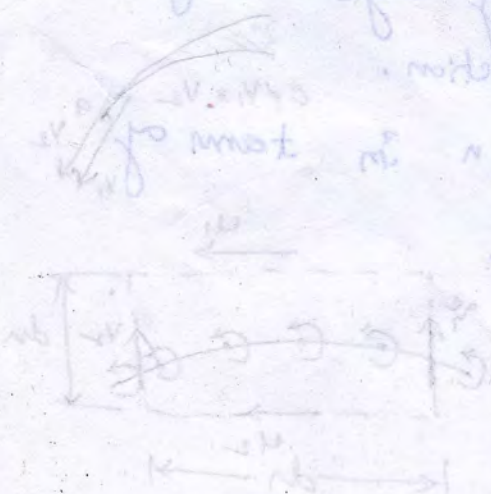
for cusped T-E ; $v_1 = v_2 \neq 0$

$$\boxed{\Gamma_{(TE)} = 0}$$

\therefore The Kutta Condition expressed in terms of the strength of the vortex sheet is

$$\boxed{\Gamma_{(TE)} = 0}$$

This is explicitly imposed in Thin airfoil theory.



$$\Gamma = \int ds = \int (u_1 - u_2) ds = \int (v_1 - v_2) ds$$