

CVG 4150 **Tutorial 3**





Question 1

A study of traffic using a tunnel showed that the following speed-concentration relationship applies:

$$u = 17.2 \ln \left(\frac{228}{k} \right) \text{ mi/h}$$

- a) Derive and plot the relation between the flow (q) and the concentration (k)
- b) Find the capacity of the tunnel
- c) Calculate the speed and concentration at capacity
- d) Find the jam concentration





Question 2

The following data were taken on a highway:

u	52	34	36	22	21	mi/h
k	8	41	48	70	105	veh/mi

- a) Estimate the free-flow speed assuming $q = AkB^k$
- b) Calculate the capacity of the highway
- c) Find u_m and k_m