# URBAN TRAFFIC PARAMETERS CALCULATION

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✓ **OBJECTIVE**

The objective of the lab is to calculate the basic traffic parameters by means of measuring the traffic flow and the speed.

✓ **LAB**

To carry out the lab the next parameters have to be measured:

- Traffic flow
- Speed
- Noise

The measurements will be carried out in the streets nearby the university.

The measurements have to be carried out during 30 minutes.

To measure traffic flow and speed, you have to distinguish between three types of vehicles: light vehicles, heavy vehicles and motorbikes.

The traffic flow is defined as the number of vehicles that pass by a certain cross section during 5 minutes. The speed will be calculated as the time a vehicles uses to cover up a distance of 50 metres.

You will have to carry out 10 noise measurements, so that each of them will last 1 minute, distributed along the 30 minutes.

- A scale.
- Equivalent level during 1 minute.
- Integration speed: FAST.

$$L_{eq} = 10 \lg \frac{1}{T} \int 10^{\frac{L(t)}{10}} dt$$

$$L_{eq} = 10 \lg \frac{1}{T} \sum_{i} 10^{\frac{L_i}{10}}$$

✓ **RESULTS**

It is asked to:

1) Calculate for each type of vehicle the next traffic flows: $I_{5MAX}$, $I_{5MEDIA}$, $I_{15MAX}$ and $I_{30}$.

2) For each type of vehicle obtaine the: instantenous speeds, space mean speed, time mean speed and the 85 percentile speed.

3) For all of the traffic, without distinguishing between each type of vehicle the space mean speed and the time mean speed. Compare the results with those obtained in the above question and comment the results.

4) Calculate the mean gap value.

5) Calculate the density.

6) Calculate the spacing $s_s$ and the means spacing $s_m$. The coefficients are b = 0.2 and c = 0.003.

7) Calculate the capacity.

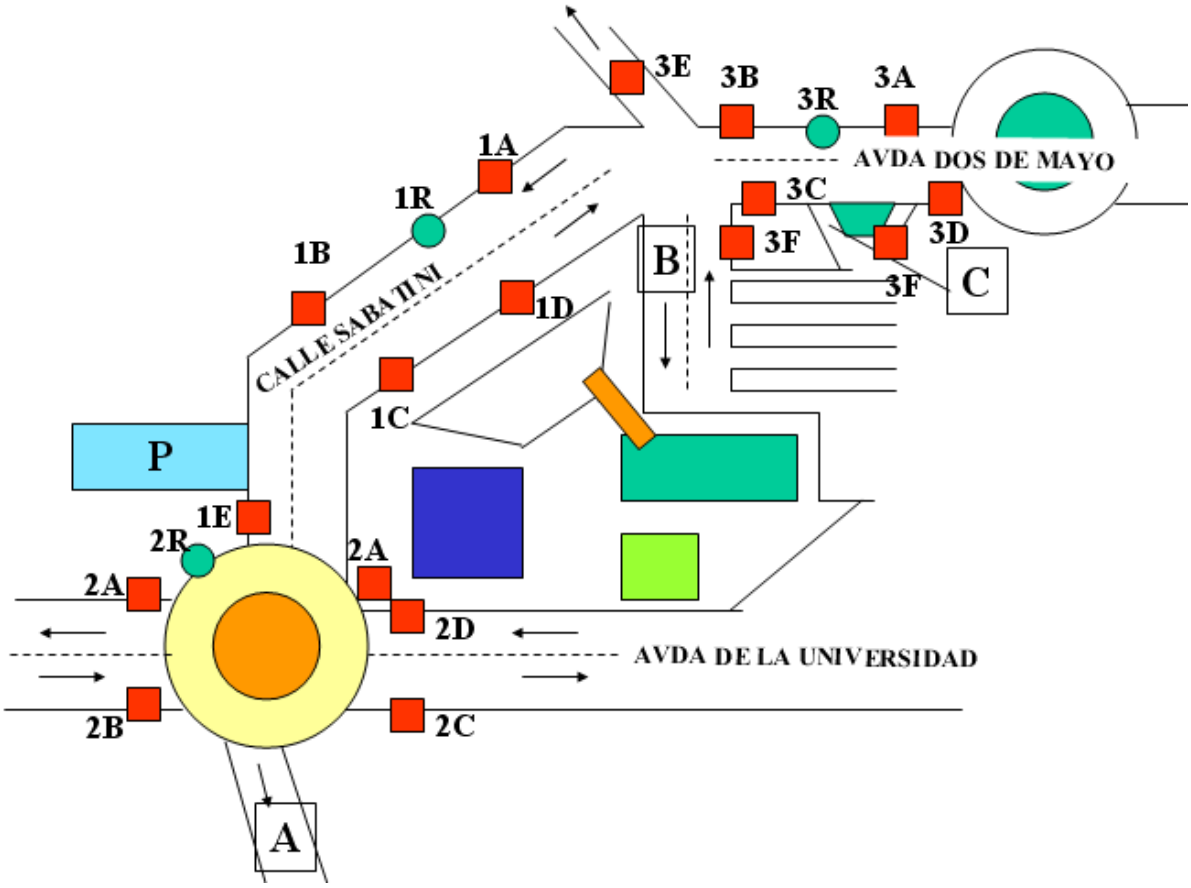
8) Estimate the serivice.

9) Calculate:

   - The maximum registered noise.
   - A mean value of the noise.

10) ¿Is there any relationship between the noise and any of the traffic parameters?

11) Carry out cost calculations considering: duration, people, materials, ...




Symbols:

P: Parking

R: Noise measurement