

# Sistemas de Tempo Real (STR) - Práticas lab. -

## Trabalho prático II

### Exercício 1

- Concluir o exercício 1
- Avançar no Exercício 2
- ROS: não é preciso instalar já. Fica para Parte II

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```
// n = is the number of elements in x
S = 0.0;
for (i = 0; i < n; i++)
{
    S = S + x[i];
}
Mu = S / n;      //Average

/* ----- */
S = 0.0;
for (i = 0; i < n; i++)
{
    S = S + pow((x[i] - Mu), 2);
}
Var = S / (n-1);  //Variance
Std = sqrt(Var);  // Standard deviation
```

*point\_cloud1.txt*

N#p = 19352

-----  
Min = -16.66900; -26.22960; -0.93210

-----  
Max = 20.36510; 2.25460; 2.50827

-----  
Ave = 2.69218; -2.03782; 0.30108

-----  
Std = 4.86018; 5.48763; 0.97626

*point\_cloud2.txt*

N#p = 19941

-----  
Min = -3.24867; -24.41590; -0.86653

-----  
Max = 55.44410; 7.67203; 10.91820

-----  
Ave = 2.91996; -0.63190; 0.25960

-----  
Std = 6.51484; 2.88950; 1.32039

*point\_cloud3.txt*

N#p = 15988

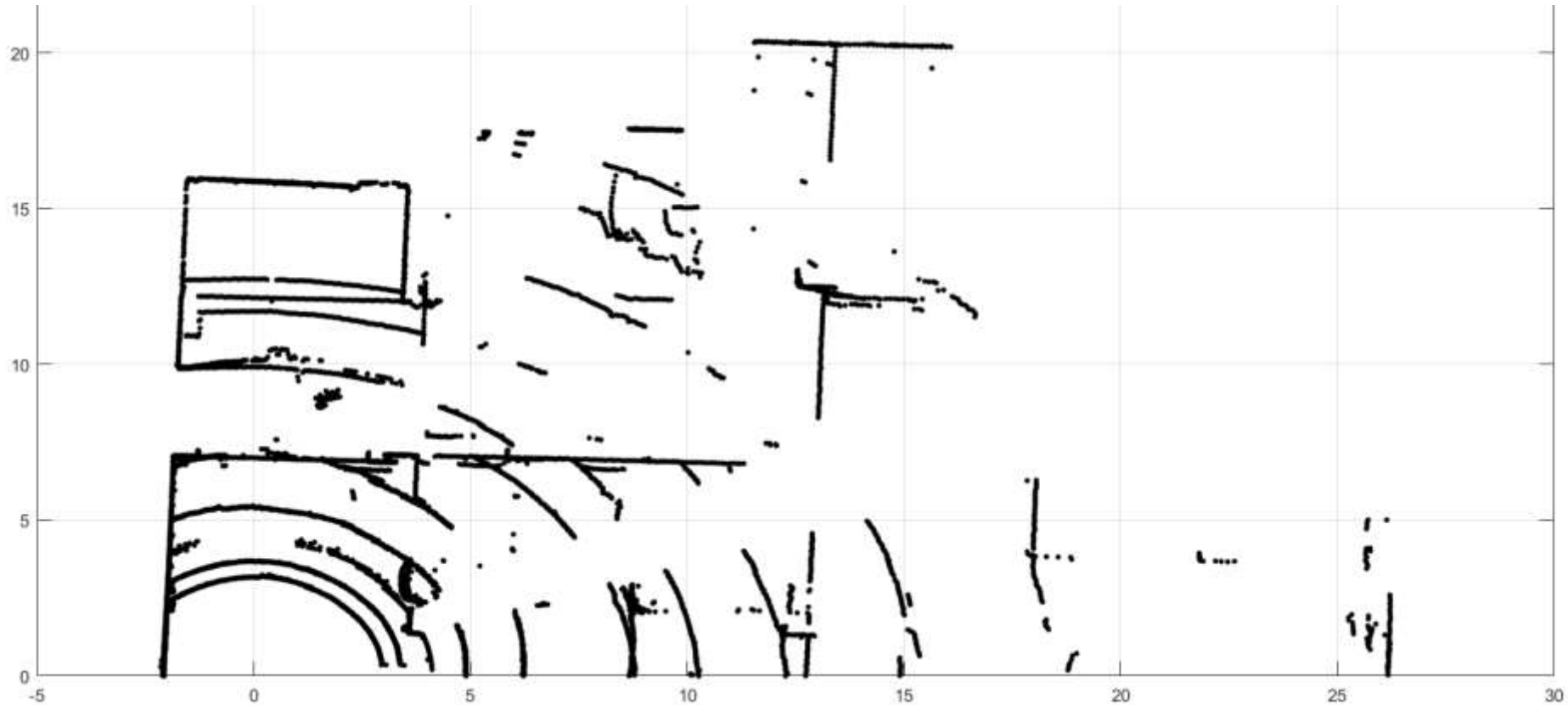
-----  
Min = -25.25590; -26.83880; -1.11266

-----  
Max = 50.78530; 62.45900; 16.28330

-----  
Ave = 4.41389; 0.44861; 1.09838

-----  
Std = 7.63488; 12.15648; 2.36370

After removing “negative” values of X, we still have around 13,7K points



*Bird view of the 3D Point-Cloud (after removing values of x-axis < 0)*