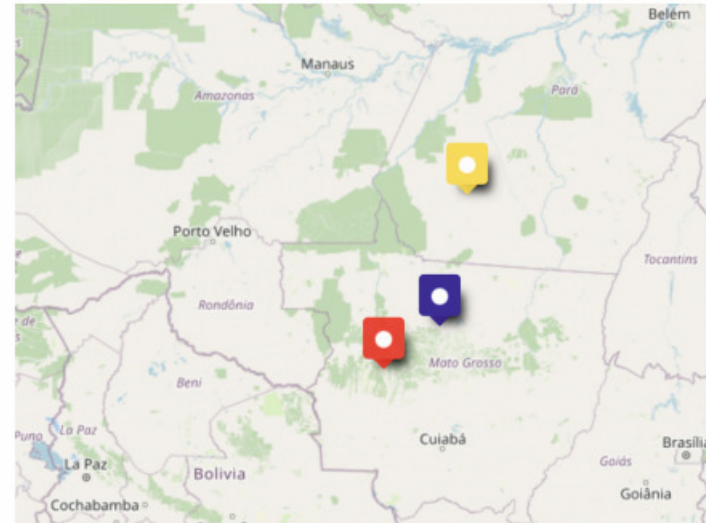


## Activity 3

# Image Analysis

2022 / 2



Let's put 15 more colors on this region !

1	M048.122.032	Cristiano Cordeiro Teixeira Vaz
2	M048.122.050	Ganadev Prajapathy Chandrasekharan
3	A.222.001	Matheus Correia Sousa da Silva
4	A.222.002	Otavio Henrique Flaeschen Oliveira
5	M048.122.023	Ronaldo da Silva Tavares

# Aspect 1

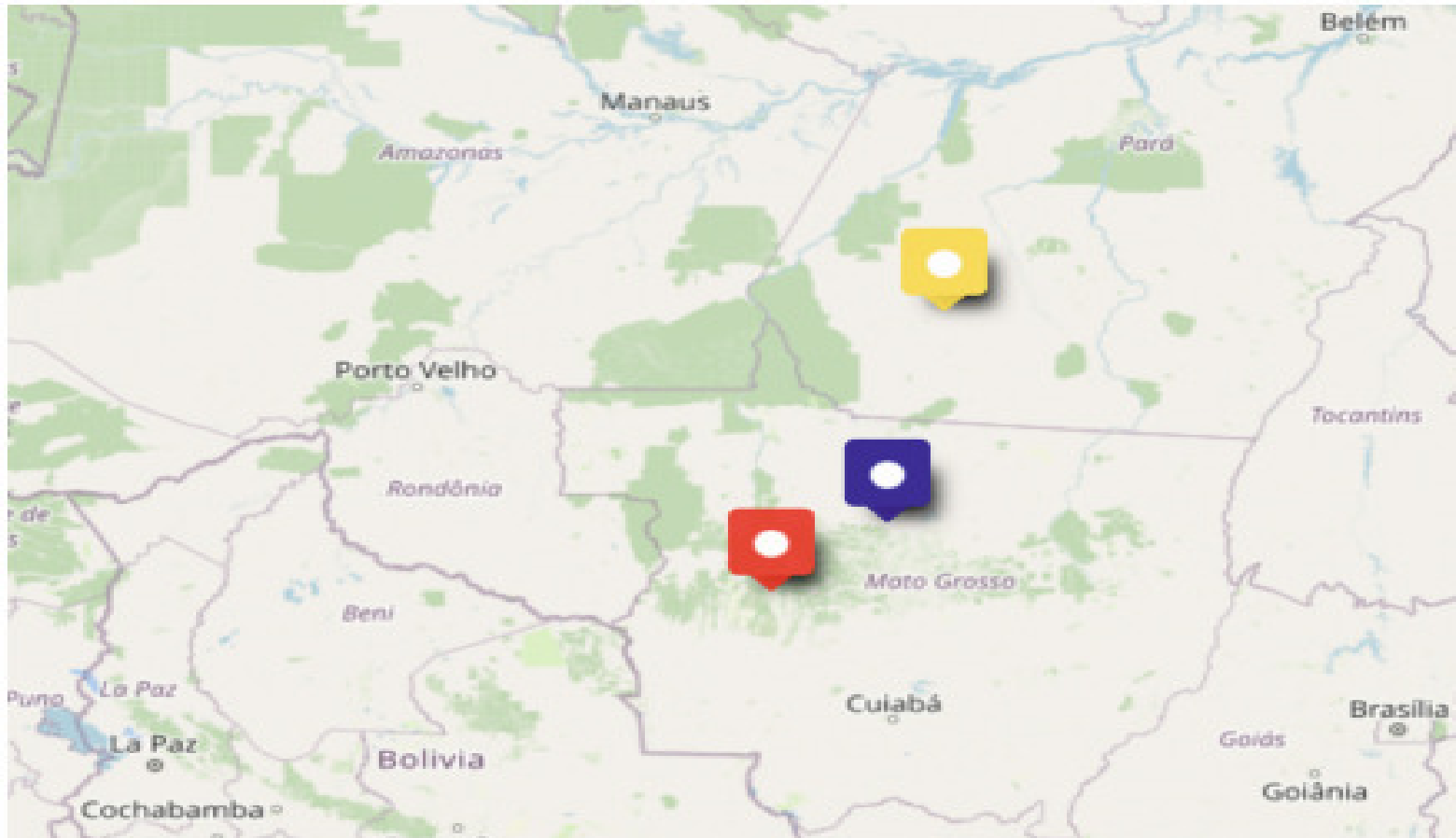
is the **speed of devastation** of native forests in all parts of the Amazon rain forest the same?

- Let's think on answering by **experimentations**:

That is: computing more images as done with the 3 in the paper .

So: each student must find more **3 images each one** and, compute the areas **as done in the paper** . OK?

Let's put more **15 colors** in this maps, **at least**



# How?

- Go at inpe site:

<http://www.dgi.inpe.br/catalogo/>

- 1 - Identify the **Latitude** and **Longitude** of the **center of the region** you select in the map
- 2 - Present each image in the normal Red, Green and Blue channels of a computer screen, as an image in **true colors**

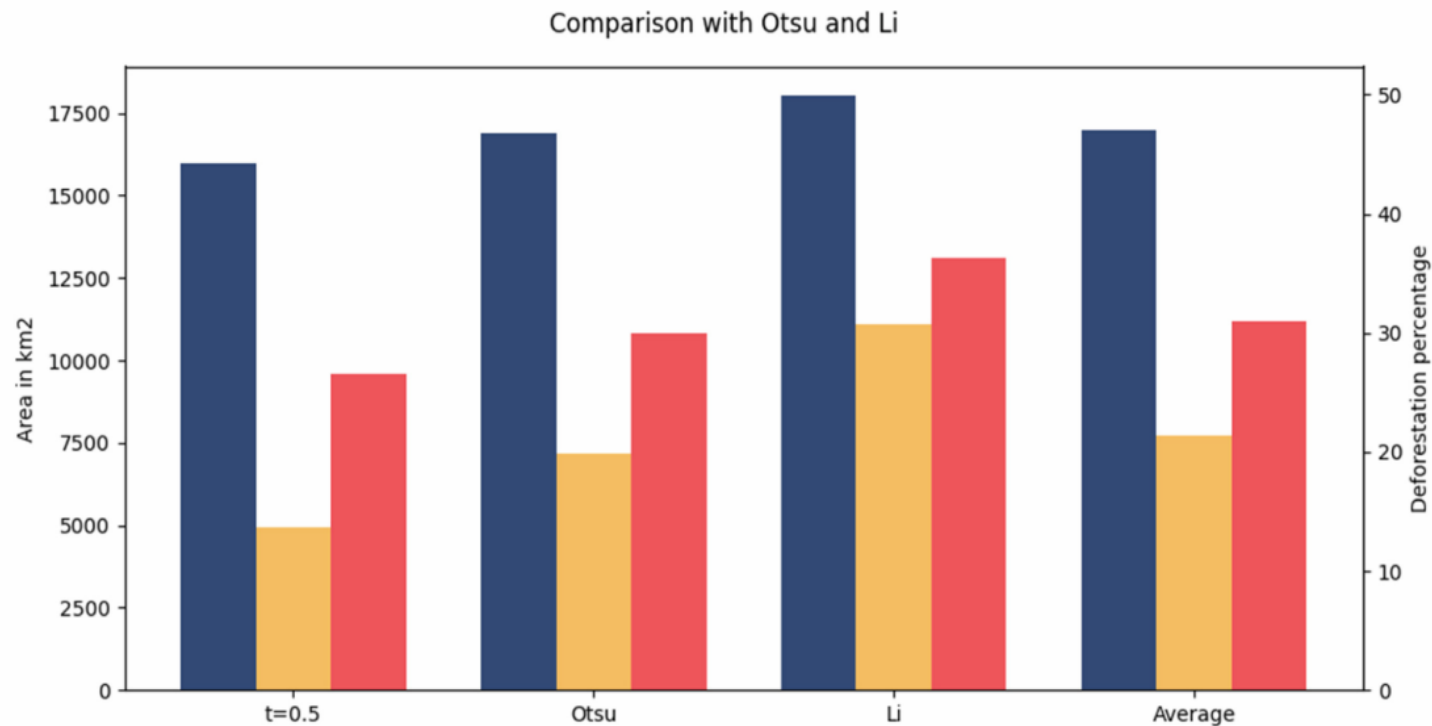
# Question 1:

- Is this mode (**true colors**) presented in the paper ?
- If yes, in what figures and pages ?

## Question 2:

- What is the deforested areas by each method in absolute values ( left scale of Fig 7 ) of your 3 images by each of the 3 methods used in the paper?
- Compute the area of your 3 images using the same idea of the paper , and Present your result numerically.
- Let's organize the 15 new data in a table !!
- And transform Fig 7 in other 3 figures !!

# Fig 7 - > 7.1 , 7.2, 7.3



**Fig. 7.** Total deforested areas by each method in absolute values scale in the left and in percentage scale in the right part of the graph. Each bar corresponds to the image of the same maker color on Fig. 1.

# Question 3:

- Compute the :
- mode, mean, median, range and standard deviation of the 18 areas we have now?  
(In others words, let's transform each of the **3 methods of the bar graph of Fig. 7 in 3 similar figures** each one with 18 bars in order to compute this statistic elements manually .
- Also: present these data in a table in absolute values and percentage



# Question 4:

- Is really the following statement true?  
“ *To assist in the visualization and qualitative analysis, it is interesting to analyze possible composition of the bands and color spaces.* “
- After answer:
  - Using bands x, y and z on the normal Red, Green and Blue channels of a computer screen, you will obtain a false color images by associating non-visible light bands to one of these channels. (Is it wright ?)

## Aspect 2 :

### Combine the bands of your images

- To RGB and after , based in your previous work of this class use other color spaces;
- Lets consider the best band combination to see the better one for healthy vegetation and deflorested area.
  - Multi band images - > false color;
  - Is there a unique band that is the best for you?

# Aspect 3

Considering the **end of the second paragraph** of the Introduction :

*.....It will be shown how to get the images, what preprocessing is needed and our implementation results with **multiple segmentation methods** for later comparison.*

# And the books of our Course

- Define **Segmentation** in Image Analysis.
- What is the class (or type) of Segmentation Methods used in the Analysis proposed in this paper?
- Are there other classes?
  - Mention the name of some techniques .
  - Propose yourself an algorithm for it.
  - Important : before any thing else: We'd like to get the idea of the algorithm and do not any implementation !

# Bibliography

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