

# AVANTIX

## Avancement Simulateur IQ

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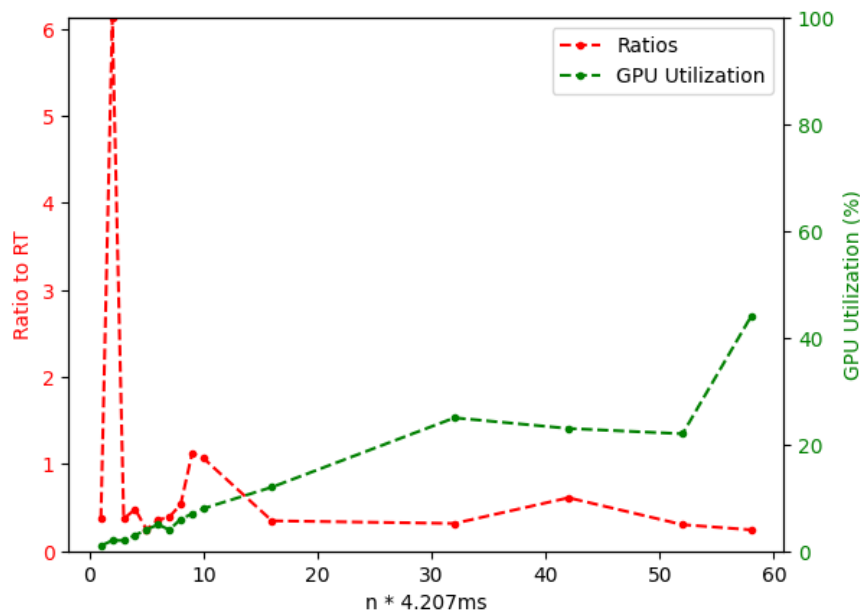
Temps contraint : SXX

# GPU utilisation vs Ratio RT

`nperseg = nfft = 1024, overlap=50%`

`dt_iq = 4,217ms`

`Sxx = abs(fft(iq*window))`



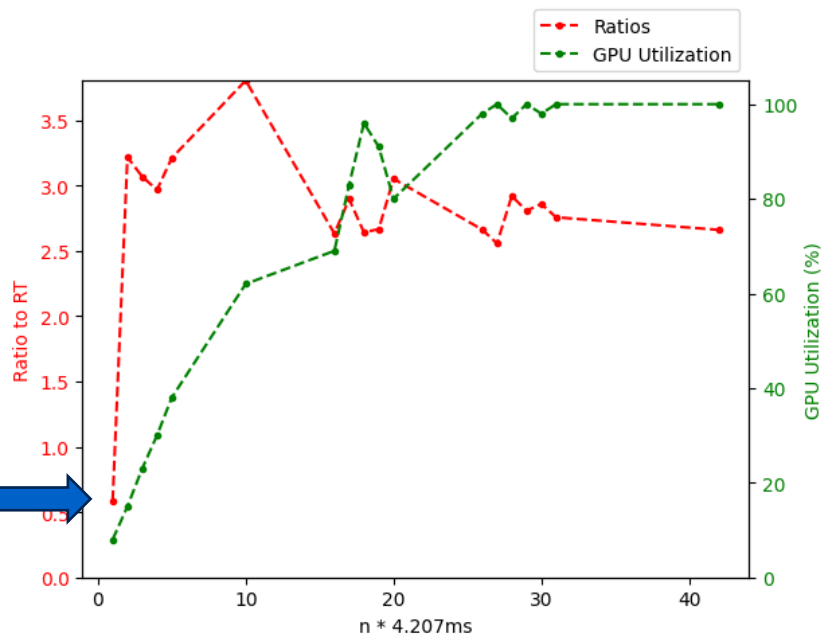
# GPU utilisation vs Ratio RT

$n_{\text{perseg}} = n_{\text{fft}} = 128 \rightarrow 131072$ ,  $\text{overlap}=50\%$

$\text{dt}_{\text{iq}} = 4,217\text{ms}$

$\text{Sxx} = \text{abs}(\text{fft}(\text{iq} * \text{window}))$

Outlier car  
warmup  
adapté à la  
taille de l'iq



# Taille iq pour warmup

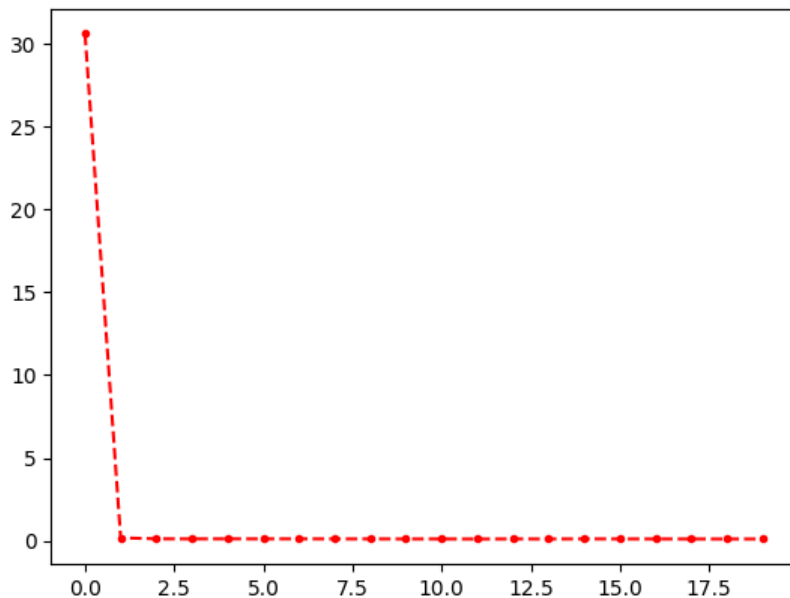
nperseg = nfft = 128 → 131072, overlap=50%

Sxx = abs(fft(iq>window))

| N_iq    | N_iq_warmup / N_iq | Ratio RT |
|---------|--------------------|----------|
| 4,217ms | 0,5                | 10       |
| 4,217ms | 1                  | 0,625    |
| 4,217ms | 2                  | 3,02     |
| 4,217ms | 3                  | 3,0      |
| 8,434ms | 0,5                | 3,05     |
| 8,434ms | 1                  | 0,277    |
| 8,434ms | 2                  | 2,864    |
| 33,69ms | 0,5                | 3,540    |
| 33,69ms | 1                  | 0,053    |
| 33,69ms | 2                  | 2,579    |

# Effet de plusieurs warmup

Dans la slide précédente, une seule execution a été réalisée avant de mesurer. Y a-t-il un effet à faire plusieurs warmup ? Non

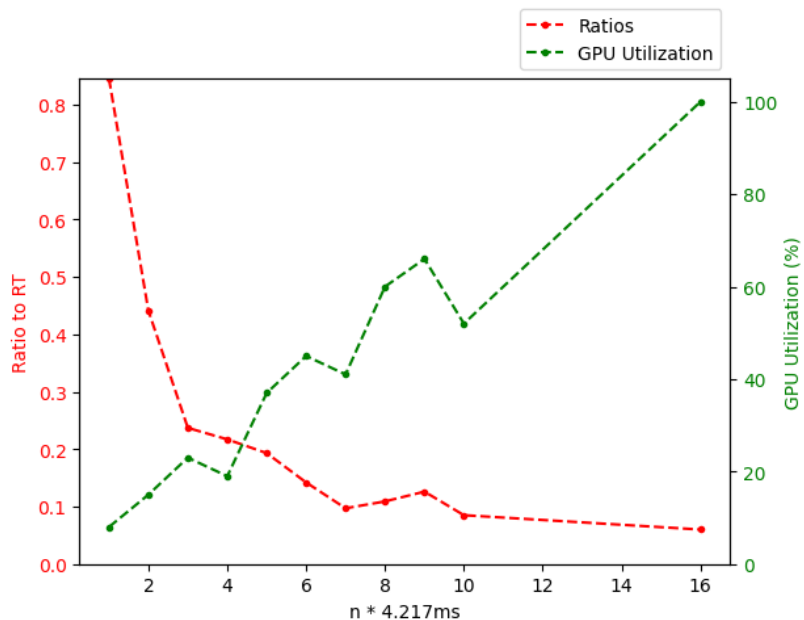


1 ratios

✓ 0.0s Open 'ratios' in Data Wrangler

```
[30.593765199416346,  
0.17874323625972766,  
0.11898981829097763,  
0.1137377074720331,  
0.11695547140989787,  
0.11463969783560313,  
0.11668805667862356,  
0.11257542710359925,  
0.11349261688351168,  
0.10960560364482005,  
0.11103553623540859,  
0.10651347238266051,  
0.11148391901750974,  
0.10858391787755352,  
0.11493014918227142,  
0.11135163659715468,  
0.1106230145762403,  
0.10874469920355061,  
0.1088090592321255,  
0.1088506201361868]
```

# [CORRIGE] GPU utilisation vs Ratio RT



1 ratios

✓ 0.0s Open 'ratios' in Data Wrangler

[0.845, 0.441, 0.237, 0.217, 0.193, 0.142, 0.097, 0.109, 0.126, 0.085, 0.06]

| N x4,217ms | Ratio RT |
|------------|----------|
| 32         | 0,011    |
| 42         | 0,009    |
| 45         | 0,009    |
| 46         | OOM      |

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MERCI