Sprawozdanie Lab10

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```python
import numpy as np

import matplotlib.pyplot as plt

import cmath

import math

import pylab

from scipy.interpolate import interp1d


from Utilities import Binary, Hamming_SECDED,
Hamming_Dekoder_SECDED

from Utilities import MT,ASK,demodulator1,spectrum


def Slim(word,p3):

    final = []

    step = len(p3)/(len(word))

    poz = 0

    for x in range (len(word)):

        final.append(p3[int(poz)])

        poz = poz + step

    return final


word = [0,1,0,0,0,0,0,1]

tb=0.1 ;N=10;f=N*(tb**(-1));f0=(N+1)/tb;f1=(N+2)/tb;A=1;A1=0;A2=1

LIMIT=8
```

```python
word = Binary('a')
word = [0,1,0,0,0,0,0,1]

[x,wynik]=Hamming_SECDED(word)
[x1,y1]=MT(x,LIMIT)
[x2,y2]=ASK(x,LIMIT)
[x2s,y2s]=spectrum(y1)
noise = np.random.normal(0,1,len(y2s))
spec_with_noise=y2s+noise
[x2n,y2n]=spectrum(spec_with_noise)
[p1,p2,p3]=demodulator1(y2,0.2)

plt.figure()
plt.subplot(511)
plt.title('Sygnal wejsciowy')
plt.plot(x1,y1)

plt.subplot(512)
plt.title('ZA(t)')
plt.plot(x2,y2)

plt.subplot(513)
plt.plot(x2s,y2s)
plt.title('widmo sygnalu')
plt.subplot(514)
```

```python
plt.plot(x2n,y2n)

plt.title('widmo sygnalu z szumem')

plt.subplot(515)

plt.title('Demodulacja sygnalu')

xlen=np.linspace(0,1,len(p3))

plt.plot(xlen,p3)

decode=Slim(word,p3)

decode=np.array(decode)

Hamming_Dekoder_SECDED(word,decode)

plt.show()
```