

```
1 C:\ProgramData\Anaconda3\python.exe Z:/Documentos/GitHub/
Projeto_Final_Udacity/Main_PCA.py
2 Found Numpy. Will be used for storing data
3 C:\ProgramData\Anaconda3\lib\site-packages\sklearn\
cross_validation.py:41: DeprecationWarning: This module
was deprecated in version 0.18 in favor of the
model_selection module into which all the refactored
classes and functions are moved. Also note that the
interface of the new CV iterators are different from that
of this module. This module will be removed in 0.20.
4     "This module will be removed in 0.20.",
DeprecationWarning)
5 C:\ProgramData\Anaconda3\lib\site-packages\sklearn\
grid_search.py:42: DeprecationWarning: This module was
deprecated in version 0.18 in favor of the model_selection
module into which all the refactored classes and
functions are moved. This module will be removed in 0.20.
6     DeprecationWarning)
7
8
9 Circuito: Nonlinear Rectfier + 4bit PRBS [FALHA] - 300 - 0
.2s.raw
10 Obtendo dados do arquivo 'Nonlinear Rectfier + 4bit PRBS [
FALHA] - 300 - 0.2s.raw'...
11
12 Lendo grandeza: time
13 "time" lido.
14
15 Lendo grandeza: V(vout)
16 "V(vout)" lido.
17 Dados brutos:
18 [array([-2.35409196e-22, -2.35409196e-22, -2.35409196e-22
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19         -2.35409196e-22, -2.35409196e-22, -2.35409196e-22
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, -2.35409196e-22,
21         -2.35409196e-22, -2.35409196e-22, -2.35408009e-22
, -2.35403617e-22,
22         -2.35391071e-22, -2.35372820e-22, -2.35332884e-22
, 1.20212248e-17,
23         9.58967160e-17, 7.64038700e-16, 3.72593615e-15
, 6.23500444e-15,
24         8.98810377e-15, 1.17195944e-14, 1.46484319e-14
, 1.77497330e-14,
```

File - Main_PCA

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27	6.65934525e-14,	8.00612560e-14,	1.02088490e-13
,	1.37306250e-13,		
28	1.81262205e-13,	2.46722320e-13,	3.50174344e-13
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34	4.99957020e-10,	5.22517751e-10,	5.49324031e-10
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,	5.48505490e-08,		
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,	7.71884231e-07,		
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,	1.55264065e-02,		
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146	8.76788616e+00,	8.76787758e+00,	8.76786041e+00
,	8.76782513e+00,		
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,	1.36621847e+01,		
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163	1.36636562e+01,	1.36636877e+01,	1.36637192e+01
,	1.36637526e+01,		
164	1.36637850e+01,	1.36638184e+01,	1.36638546e+01
,	1.36638937e+01,		
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166	1.36642237e+01,	1.36643200e+01,	1.36644564e+01
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167	1.36647787e+01,	1.36649523e+01,	1.36652288e+01
,	1.36656418e+01,		
168	1.36664066e+01,	1.36679335e+01,	1.36888361e+01
,	1.37117796e+01,		
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171	1.39213161e+01,	1.39351444e+01,	1.39470520e+01
,	1.39570360e+01,		
172	1.39650955e+01,	1.39712315e+01,	1.39754429e+01
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175	1.38780317e+01,	1.38578911e+01,	1.38359671e+01
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File - Main_PCA

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File - Main_PCA

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File - Main_PCA

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1018	8.88580513e+00,	8.88600826e+00,	8.88628578e+00
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1019	8.88715363e+00,	8.88779831e+00,	8.88862228e+00
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1052 ,	2.97243023e+00,	2.78488421e+00,	2.77494001e+00
1053 ,	2.82847500e+00,	2.78488421e+00,	2.77494001e+00
1054 ,	3.26854324e+00,	3.32397819e+00,	3.05880260e+00
1055 ,	3.53201914e+00,	2.85613394e+00,	4.40302801e+00
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1057 ,	5.54435015e+00,	4.93631649e+00,	5.58000612e+00
1058 ,	5.58000708e+00,	5.54435015e+00,	5.58000612e+00
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1063 ,	5.58054304e+00,	5.58028078e+00,	5.58171272e+00
1064 ,	5.58233976e+00,	5.58054304e+00,	5.58427525e+00
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1067 ,	5.58549929e+00,	5.58488274e+00,	5.58657312e+00
1068 ,	5.58698606e+00,	5.58549929e+00,	5.58657312e+00

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1060	5.59471750e+00,	5.59686756e+00,	5.59978867e+00
,	5.60422277e+00,		
1061	5.61188269e+00,	5.62722588e+00,	5.65800285e+00
,	5.71982098e+00,		
1062	5.78561878e+00,	5.83441496e+00,	5.87346029e+00
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1063	5.93709993e+00,	5.96550751e+00,	5.99587393e+00
,	6.02342939e+00,		
1064	6.05153227e+00,	6.08018208e+00,	6.11139774e+00
,	6.14833450e+00,		
1065	6.19988680e+00,	6.26770449e+00,	6.33856964e+00
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1066	6.56795788e+00,	6.70021772e+00,	6.83320856e+00
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1069	8.72732067e+00,	8.99569130e+00,	9.26178932e+00
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1072	1.11362152e+01,	1.12509670e+01,	1.13641691e+01
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1073	1.15857544e+01,	1.16940565e+01,	1.18006449e+01
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,	1.20147390e+01,		
1076	1.20148058e+01,	1.20149393e+01,	1.20152073e+01
,	1.20157423e+01,		
1077	1.20168123e+01,	1.20555077e+01,	1.20555086e+01
,	1.22264147e+01,		
1078	1.24187002e+01,	1.26924620e+01,	1.29478331e+01
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1079	1.34685974e+01,	1.37170506e+01,	1.39757795e+01
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	, 8.81740856e+00,		

File - Main_PCA

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1119	1.38298445e+01,	1.38300056e+01,	1.38301897e+01
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1123	1.40638199e+01,	1.40801687e+01,	1.40945644e+01
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,	1.36792564e+01,		
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1195	1.33226681e+01,	1.32862730e+01,	1.32436905e+01
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1196	1.31536522e+01,	1.31067200e+01,	1.30585575e+01
	, 1.30091991e+01,		
1197	1.29586821e+01,	1.29070435e+01,	1.27457914e+01
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1198	1.21521969e+01,	1.18330269e+01,	1.15067616e+01
	, 1.12531853e+01,		
1199	1.12531853e+01,	1.12531834e+01,	1.12531815e+01
	, 1.12531786e+01,		
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	, 9.04140663e+00,		
1204	9.05005169e+00,	9.08614826e+00,	9.14984417e+00
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	.09112047e-22,		
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	.09170726e-22,		
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1216	6.26241680e-14, 7.44706692e-14, 9.32261064e-14, 1
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	.15438767e-09,
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	.25237591e-06,
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	.52686063e-04,
1229	4.92351188e-04, 9.59748519e-04, 1.87597761e-03, 3
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File - Main_PCA

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1242	2.29173827e+00, 2.38006759e+00, 2.48447514e+00, 2 .59070063e+00,
1243	2.69876766e+00, 2.80862904e+00, 2.92023659e+00, 3 .03354192e+00,
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1246	5.71044493e+00, 6.12222385e+00, 6.53661299e+00, 6 .95203352e+00,
1247	7.36692333e+00, 7.77974510e+00, 8.18899250e+00, 8 .59329224e+00,
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1251	8.79091835e+00, 8.79092789e+00, 8.79093075e+00, 8 .79093456e+00,
1252	8.79093838e+00, 8.79094219e+00, 8.79094696e+00, 8 .79095173e+00,
1253	8.79095650e+00, 8.79096127e+00, 8.79096603e+00, 8 .79097080e+00,
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File - Main_PCA

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1287	4.47094154e+00, 5.01284504e+00, 5.62704897e+00, 5 .65779209e+00,
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File - Main_PCA

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1325	1.20457249e+01, 1.16710701e+01, 1.13892317e+01, 1
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1331	8.78395176e+00, 8.78394604e+00, 8.78393459e+00, 8 .78391266e+00,
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1333	8.78357410e+00, 8.78345966e+00, 8.78330135e+00, 8 .78310776e+00,
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1341	1.24497929e+01, 1.27697401e+01, 1.30626030e+01, 1 .33227005e+01,
1342	1.35449820e+01, 1.37253571e+01, 1.37703438e+01, 1 .37703447e+01,
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1378	1.28437080e+01, 1.28437071e+01, 1.28437061e+01, 1 .28437061e+01,
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1382	1.08855391e+01, 1.05586452e+01, 1.02490959e+01, 9 .96267986e+00,
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1384	9.63413525e+00, 9.63413525e+00, 9.63413429e+00, 9 .63413334e+00,
1385	9.63413143e+00, 9.63410664e+00, 9.63407803e+00, 9 .63402081e+00,
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1387	9.63281822e+00, 9.63232803e+00, 9.63177204e+00, 9 .63103962e+00,
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1391	8.99710560e+00, 9.04980755e+00, 9.13114929e+00, 9 .27145767e+00,
1392	9.45731163e+00, 9.48427868e+00, 9.48427963e+00, 9 .48427963e+00,
1393	9.48427963e+00, 9.48427963e+00, 9.69398880e+00, 9 .94680595e+00,
1394	1.02266216e+01, 1.05279770e+01, 1.06532469e+01, 1 .09748306e+01,
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1671	-8.26688679e-23,	-8.11656398e-23,	-7.78025806e-23
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1678	8.60903525e-13,	1.60094366e-12,	3.29146823e-12
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1682	4.24330487e-10,	4.33353659e-10,	4.51730625e-10
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1744 ,	1.26691866e+01,	1.26676331e+01,	1.26672668e+01
1745 ,	1.26672668e+01,		
1746 ,	1.26672668e+01,	1.26672668e+01,	1.26672659e+01
1747 ,	1.26672649e+01,		
1748 ,	1.26671295e+01,	1.26669903e+01,	1.26669903e+01
1749 ,	1.26669893e+01,		
1750 ,	1.26669893e+01,	1.26669893e+01,	1.26669874e+01
1751 ,	1.26668701e+01,		
1752 ,	1.26668463e+01,	1.26668463e+01,	1.26668463e+01
1753 ,	1.26668453e+01,		

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1732	1.26668453e+01,	1.26668444e+01,	1.26668377e+01
,	1.26668282e+01,		
1733	1.26668282e+01,	1.26668282e+01,	1.26668282e+01
,	1.26668272e+01,		
1734	1.26668262e+01,	1.26668243e+01,	1.26668205e+01
,	1.26668205e+01,		
1735	1.26668205e+01,	1.26668205e+01,	1.26668196e+01
,	1.26668186e+01,		
1736	1.26668186e+01,	1.26668177e+01,	1.26668177e+01
,	1.26668167e+01,		
1737	1.26668167e+01,	1.26668167e+01,	1.26668167e+01
,	1.26668167e+01,		
1738	1.26668167e+01,	1.26668158e+01,	1.26668158e+01
,	1.26668158e+01,		
1739	1.26668158e+01,	1.26668158e+01,	1.26668158e+01
,	1.26148624e+01,		
1740	1.25363817e+01,	1.23808870e+01,	1.21690283e+01
,	1.19033537e+01,		
1741	1.15005131e+01,	1.10262070e+01,	1.04893589e+01
,	9.90007210e+00,		
1742	9.26943111e+00,	8.60930061e+00,	8.27457905e+00
,	8.27457809e+00,		
1743	8.27457714e+00,	8.27456665e+00,	8.27456474e+00
,	8.27456284e+00,		
1744	8.27455997e+00,	8.27455521e+00,	8.27423096e+00
,	7.55756474e+00,		
1745	6.87907791e+00,	6.21602917e+00,	5.58086395e+00
,	4.98549747e+00,		
1746	4.44108582e+00,	3.95781684e+00,	3.54471874e+00
,	3.26998472e+00,		
1747	3.04838300e+00,	2.92016625e+00,	2.92016602e+00
,	2.80423307e+00,		
1748	2.74684906e+00,	2.72281432e+00,	2.73226714e+00
,	2.77511811e+00,		
1749	2.85105038e+00,	3.00278378e+00,	3.21044445e+00
,	3.47146177e+00,		
1750	3.86781025e+00,	4.33486414e+00,	4.86369562e+00
,	5.46675301e+00,		
1751	5.50090647e+00,	5.50211954e+00,	5.50212049e+00
,	5.50212431e+00,		
1752	5.50212812e+00,	5.50213289e+00,	5.50214338e+00
,	5.50216389e+00,		
1753	5.50219679e+00,	5.50226307e+00,	5.50239515e+00
,	5.50265980e+00,		
1754	5.50318861e+00,	5.50384569e+00,	5.50448704e+00

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1756 ,	5.50759411e+00,		
1757 ,	5.50806761e+00,	5.50849199e+00,	5.50891829e+00
1758 ,	5.50934982e+00,		
1759 ,	5.50996065e+00,	5.51066494e+00,	5.51156330e+00
1760 ,	5.51256895e+00,		
1761 ,	5.51383591e+00,	5.51532316e+00,	5.51728249e+00
1762 ,	5.51973248e+00,		
1763 ,	5.52331638e+00,	5.52875233e+00,	5.53947115e+00
1764 ,	5.56095362e+00,		
1765 ,	5.60404968e+00,	5.64843178e+00,	5.68738556e+00
1766 ,	5.72095299e+00,		
1767 ,	5.75115108e+00,	5.77950430e+00,	5.80960846e+00
1768 ,	5.83725739e+00,		
1769 ,	5.86563015e+00,	5.89492130e+00,	5.92742300e+00
1770 ,	5.96714830e+00,		
1771 ,	6.02701139e+00,	6.09285688e+00,	6.17644548e+00
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1773 ,	6.40106964e+00,	6.53174210e+00,	6.66323757e+00
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1775 ,	6.92834139e+00,	7.06177425e+00,	7.19567966e+00
1776 ,	7.32997417e+00,		
1777 ,	7.46457529e+00,	7.73437262e+00,	8.00444126e+00
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1779 ,	8.54297733e+00,	8.81029320e+00,	9.07557392e+00
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1781 ,	9.59795761e+00,	9.85407543e+00,	1.01061859e+01
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1783 ,	1.05966358e+01,	1.07160759e+01,	1.08341484e+01
1784 ,	1.09508047e+01,		
1785 ,	1.10660000e+01,	1.11796894e+01,	1.12918282e+01
1786 ,	1.14023743e+01,		
1787 ,	1.15112858e+01,	1.16185236e+01,	1.17240477e+01
1788 ,	1.18282337e+01,		
1789 ,	1.18525639e+01,	1.18848543e+01,	1.18849173e+01
1790 ,	1.18849840e+01,		
1791 ,	1.18851175e+01,	1.18853846e+01,	1.18859186e+01
1792 ,	1.18869877e+01,		
1793 ,	1.19382410e+01,	1.19382420e+01,	1.21085405e+01
1794 ,	1.23001671e+01,		
1795 ,	1.25730419e+01,	1.28276463e+01,	1.30633087e+01
1796 ,	1.33470802e+01,		
1797 ,	1.35950623e+01,	1.38535023e+01,	1.40538206e+01
1798 ,	1.41957474e+01,		

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1779	1.42730293e+01,	1.42730284e+01,	1.42730284e+01
,	1.42730284e+01,		
1780	1.42730274e+01,	1.42730274e+01,	1.42393427e+01
,	1.42013941e+01,		
1781	1.41793642e+01,	1.41553288e+01,	1.41293106e+01
,	1.41013374e+01,		
1782	1.40714340e+01,	1.40396261e+01,	1.40059423e+01
,	1.39704103e+01,		
1783	1.39330597e+01,	1.38939190e+01,	1.38530197e+01
,	1.38103924e+01,		
1784	1.37660694e+01,	1.37202969e+01,	1.36979904e+01
,	1.36761875e+01,		
1785	1.36539936e+01,	1.36292286e+01,	1.36061382e+01
,	1.35822563e+01,		
1786	1.35574446e+01,	1.35307732e+01,	1.35016432e+01
,	1.34689369e+01,		
1787	1.34312668e+01,	1.33865833e+01,	1.33318615e+01
,	1.32733688e+01,		
1788	1.32135954e+01,	1.31525707e+01,	1.30903406e+01
,	1.30269508e+01,		
1789	1.26942997e+01,	1.23400850e+01,	1.19709005e+01
,	1.15758295e+01,		
1790	1.15540686e+01,	1.15540676e+01,	1.15540676e+01
,	1.15540676e+01,		
1791	1.15540667e+01,	1.11972170e+01,	1.08253050e+01
,	1.04666176e+01,		
1792	1.01278181e+01,	9.81519127e+00,	9.53452301e+00
,	9.29099464e+00,		
1793	9.08908081e+00,	8.93246937e+00,	8.82373047e+00
,	8.80088615e+00,		
1794	8.80088615e+00,	8.80088520e+00,	8.80088425e+00
,	8.80088425e+00,		
1795	8.80088425e+00,	8.80088329e+00,	8.80087662e+00
,	8.80086708e+00,		
1796	8.80084991e+00,	8.80081558e+00,	8.80074692e+00
,	8.80067825e+00,		
1797	8.80057812e+00,	8.80046463e+00,	8.80030727e+00
,	8.80013561e+00,		
1798	8.79989719e+00,	8.79960442e+00,	8.79914474e+00
,	8.79845333e+00,		
1799	8.79709148e+00,	8.79444790e+00,	8.78948307e+00

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1801 ,	8.75484467e+00,		
1802 ,	8.76387405e+00,	8.80435753e+00,	8.87681580e+00
1803 ,	9.01087952e+00,		
1804 ,	9.19074059e+00,	9.41287231e+00,	9.67295265e+00
1805 ,	9.96594334e+00,		
1806 ,	1.02861891e+01,	1.05198660e+01,	1.05213594e+01
1807 ,	1.05213604e+01,		
1808 ,	1.05213604e+01,	1.05213604e+01,	1.05213614e+01
1809 ,	1.08534842e+01,		
1810 ,	1.12150488e+01,	1.15798569e+01,	1.19409084e+01
1811 ,	1.22912807e+01,		
1812 ,	1.26242561e+01,	1.29334478e+01,	1.32129221e+01
1813 ,	1.34573097e+01,		
1814 ,	1.36621361e+01,	1.37147551e+01,	1.37147551e+01
1815 ,	1.37147579e+01,		
1816 ,	1.3714759e+01,	1.37147589e+01,	1.37147598e+01
1817 ,	1.37147608e+01,		
1818 ,	1.37147636e+01,	1.37147684e+01,	1.37147789e+01
1819 ,	1.37148008e+01,		
1820 ,	1.37148428e+01,	1.37149277e+01,	1.37150965e+01
1821 ,	1.37152767e+01,		
1822 ,	1.37154360e+01,	1.37155867e+01,	1.37157259e+01
1823 ,	1.37158451e+01,		
1824 ,	1.37159729e+01,	1.37160921e+01,	1.37161427e+01
1825 ,	1.37161779e+01,		
1826 ,	1.37162094e+01,	1.37162399e+01,	1.37162724e+01
1827 ,	1.37163038e+01,		
1828 ,	1.37163372e+01,	1.37163725e+01,	1.37164106e+01
1829 ,	1.37164564e+01,		
1830 ,	1.37165146e+01,	1.37165852e+01,	1.37166567e+01
1831 ,	1.37167330e+01,		
1832 ,	1.37168283e+01,	1.37169619e+01,	1.37171049e+01
1833 ,	1.37172785e+01,		
1834 ,	1.37174501e+01,	1.37177229e+01,	1.37181292e+01
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1836 ,	1.37204285e+01,	1.37413921e+01,	1.37643785e+01
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1838 ,	1.38231430e+01,	1.38498125e+01,	1.38746128e+01
1839 ,	1.38975296e+01,		
1840 ,	1.39185524e+01,	1.39376698e+01,	1.39548750e+01
1841 ,	1.39701595e+01,		
1842 ,	1.39835196e+01,	1.39949512e+01,	1.40044498e+01
1843 ,	1.40120153e+01,		

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1822	1.40176487e+01,	1.40213499e+01,	1.40231228e+01
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1823	1.40208988e+01,	1.40110245e+01,	1.40032387e+01
,	1.39935656e+01,		
1824	1.39820166e+01,	1.39686041e+01,	1.39533415e+01
,	1.39362431e+01,		
1825	1.39173231e+01,	1.38965988e+01,	1.38740864e+01
,	1.38498058e+01,		
1826	1.38237762e+01,	1.37960157e+01,	1.37665472e+01
,	1.37353935e+01,		
1827	1.37025766e+01,	1.36681213e+01,	1.36320543e+01
,	1.35944004e+01,		
1828	1.35551891e+01,	1.35144491e+01,	1.34722099e+01
,	1.34285030e+01,		
1829	1.33833609e+01,	1.33368177e+01,	1.32889071e+01
,	1.32396641e+01,		
1830	1.31891270e+01,	1.31374302e+01,	1.31021967e+01
,	1.31021967e+01,		
1831	1.31021957e+01,	1.31021929e+01,	1.31021891e+01
,	1.31021805e+01,		
1832	1.31021624e+01,	1.30999641e+01,	1.30842524e+01
,	1.30662069e+01,		
1833	1.30662060e+01,	1.30662050e+01,	1.30662031e+01
,	1.30661983e+01,		
1834	1.30661898e+01,	1.30661716e+01,	1.30616703e+01
,	1.30571270e+01,		
1835	1.30571260e+01,	1.30571251e+01,	1.30571232e+01
,	1.30571184e+01,		
1836	1.30571098e+01,	1.30570917e+01,	1.30548525e+01
,	1.30525751e+01,		
1837	1.30525742e+01,	1.30525732e+01,	1.30525713e+01
,	1.30525665e+01,		
1838	1.30525579e+01,	1.30525408e+01,	1.30514650e+01
,	1.30503531e+01,		
1839	1.30503521e+01,	1.30503511e+01,	1.30503492e+01
,	1.30503445e+01,		
1840	1.30503368e+01,	1.30503197e+01,	1.30498085e+01
,	1.30492640e+01,		
1841	1.30492640e+01,	1.30492630e+01,	1.30492601e+01
,	1.30492563e+01,		
1842	1.30492477e+01,	1.30492306e+01,	1.30489922e+01
,	1.30487204e+01,		
1843	1.30487194e+01,	1.30487185e+01,	1.30487156e+01
,	1.30487118e+01,		
1844	1.30487032e+01,	1.30486860e+01,	1.30485840e+01

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1853 ,	1.30483980e+01,	1.30483942e+01,	1.30483856e+01
1854 ,	1.30483847e+01,		
1855 ,	1.30483837e+01,	1.30483818e+01,	1.30483780e+01
1856 ,	1.30483751e+01,		
1857 ,	1.30483742e+01,	1.30483742e+01,	1.30483742e+01
1858 ,	1.30483732e+01,		
1859 ,	1.30483732e+01,	1.30483732e+01,	1.30483732e+01
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1867 ,	9.80349731e+00,	9.80349731e+00,	9.80349731e+00
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1871 ,	9.80346107e+00,	9.80342960e+00,	9.80336761e+00
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1873 ,	9.80302811e+00,	9.80279350e+00,	9.80246735e+00
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1875 ,	9.80155087e+00,	9.80095005e+00,	9.80016708e+00
1876 ,	9.79919052e+00,		
1877 ,	9.79776478e+00,	9.79565239e+00,	9.79167271e+00
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1879 ,	9.76799774e+00,	9.55053520e+00,	9.35002613e+00
1880 ,	9.18917465e+00,		
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1882 ,	8.97156525e+00,		
1883 ,	8.99759865e+00,	9.05286694e+00,	9.16191483e+00
1884 ,	9.27970505e+00,		
1885 ,	9.34335423e+00,	9.34335518e+00,	9.34335518e+00
1886 ,	9.34335518e+00,		

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,	1.12624645e+01,		
1869	1.15928755e+01,	1.19186201e+01,	1.22335329e+01
,	1.22961731e+01,		
1870	1.23239546e+01,	1.23239546e+01,	1.23239565e+01
,	1.23239584e+01,		
1871	1.23239613e+01,	1.23239670e+01,	1.23239794e+01
,	1.23239985e+01,		
1872	1.23240356e+01,	1.23241110e+01,	1.23242598e+01
,	1.23245592e+01,		
1873	1.23249092e+01,	1.23252487e+01,	1.23256063e+01
,	1.23259525e+01,		
1874	1.23263206e+01,	1.23266897e+01,	1.23270893e+01
,	1.23275051e+01,		
1875	1.23279667e+01,	1.23284731e+01,	1.23290615e+01
,	1.23297472e+01,		
1876	1.23305979e+01,	1.23316765e+01,	1.23331623e+01
,	1.23353472e+01,		
1877	1.23391075e+01,	1.25660152e+01,	1.26779766e+01
,	1.27324524e+01,		
1878	1.27858677e+01,	1.28381805e+01,	1.28893528e+01
,	1.29393435e+01,		
1879	1.29881153e+01,	1.30356293e+01,	1.30818834e+01
,	1.31222525e+01,		
1880	1.31546030e+01,	1.31834860e+01,	1.32136059e+01
,	1.32403469e+01,		
1881	1.32674341e+01,	1.32949495e+01,	1.33250360e+01
,	1.33613930e+01,		
1882	1.33962812e+01,	1.34295979e+01,	1.34613171e+01
,	1.34914179e+01,		
1883	1.35198765e+01,	1.35466728e+01,	1.35717907e+01
,	1.35952120e+01,		
1884	1.36169214e+01,	1.36369047e+01,	1.36551514e+01
,	1.36716490e+01,		
1885	1.36863890e+01,	1.36993647e+01,	1.37105694e+01
,	1.37199974e+01,		
1886	1.37276468e+01,	1.37335138e+01,	1.37375984e+01
,	1.37399025e+01,		
1887	1.37404251e+01,	1.37391710e+01,	1.37361450e+01
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1888	1.37247953e+01,	1.37164869e+01,	1.37064333e+01
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1889	1.36719742e+01,	1.36706886e+01,	1.36628590e+01

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1904 ,	1.24219398e+01,	1.21248426e+01,	1.18140116e+01
1905 ,	1.14952202e+01,		
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1919	3.59072050e-10,	3.59312385e-10,	3.60827007e-10
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1920	3.66938591e-10,	3.75220660e-10,	3.92248428e-10
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1921	4.44197068e-10,	4.81035489e-10,	5.02028696e-10
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2006	1.07886562e+01,	1.09065475e+01,	1.10229750e+01
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2008	1.16882458e+01,	1.17931805e+01,	1.18963127e+01
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2049	1.38806019e+01,	1.38806171e+01,	1.38806334e+01
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2050	1.38806686e+01,	1.38806915e+01,	1.38807249e+01
,	1.38807554e+01,		
2051	1.38807936e+01,	1.38808336e+01,	1.38808804e+01
,	1.38809452e+01,		
2052	1.38810253e+01,	1.38811150e+01,	1.38812141e+01
,	1.38813581e+01,		
2053	1.38815651e+01,	1.38819790e+01,	1.38826675e+01
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2237 ,	1.24306583e+01,	5.32219982e+00,	5.32206535e+00
2238 ,	1.24306583e+01,	5.32246876e+00,	5.32300663e+00
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2230	5.40735149e+00,	5.44107819e+00,	5.47244215e+00
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2231	5.53044796e+00,	5.55869532e+00,	5.58809280e+00
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File - Main_PCA

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4669	1.40000250e-01, 1.40000252e-01, 1.40000267e-01, 1 .40000270e-01,
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        .99710798e-01,
4719      1.99999750e-01, 2.00000000e-01, 0.00000000e+00
    ])
4720
4721 Dados do LTR:
4722  [<LTSpice_RawRead.Axis object at 0x0000024245D61EF0>, <
        LTSpice_RawRead.Trace object at 0x0000024245DADC18>]
4723
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File - Main_PCA

```
4724 Grandezas lidas.  
4725 Leitura do arquivo terminada.  
4726 Salvando características do circuito...  
4727  
4728 Iniciando a aplicação do PAA  
4729 Quantidade de segmentos de PAA: 100  
4730 (3300, 1337)  
4731 Variância total dos primeiros 1 componentes: 0.  
    4790198030019432  
4732 Variância total dos primeiros 2 componentes: 0.  
    6135061293449984  
4733 Variância total dos primeiros 3 componentes: 0.  
    7120201522483912  
4734 Variância total dos primeiros 4 componentes: 0.  
    7744919558982739  
4735 Variância total dos primeiros 5 componentes: 0.  
    8114263077212153  
4736 Variância total dos primeiros 6 componentes: 0.  
    8393285853056638  
4737  
4738 Process finished with exit code 0  
4739
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