```
Modules:
  MAIN                          BAYESREGRESSIONUPDATE
  MVNRNDT                       BAYESVARIANCEUPDATE
  QDRAW                         RANDSTDNORMT
  QDRAWSLOW                     QDRAWVEC

  COLVEC (undefined)
```

| p | q | pm |
|---|---|---|
| 0.009166 | . | 0.0032568 |
| -0.022375 | . | 0.0027737 |
| -0.019756 | . | -0.004039 |
| -0.02765 | . | -0.005236 |
| -0.048266 | . | -0.013191 |
| -0.032016 | . | -0.005959 |
| -0.047124 | . | 0.000962 |
| -0.049695 | . | -0.009872 |
| -0.049067 | . | -0.012711 |
| -0.017535 | . | -0.005723 |
| -0.050307 | . | -0.015753 |
| -0.046041 | . | -0.021067 |
| -0.052361 | . | -0.027867 |
| -0.075763 | . | -0.030876 |
| -0.097593 | . | -0.048437 |
| -0.057562 | . | -0.042188 |
| -0.084658 | . | -0.045115 |
| -0.063726 | . | -0.040657 |
| -0.022146 | . | -0.024124 |
| -0.000506 | . | -0.029576 |
| 0.0031235 | . | -0.030937 |
| 0.0123387 | . | -0.033542 |
| -0.011959 | . | -0.037647 |
| -0.003082 | . | -0.018832 |
| 0.0313726 | . | -0.009776 |
| -0.004666 | . | -0.016203 |
| -0.006806 | . | -0.036011 |

| p | q | pm |
|---|---|---|
| -0.013206 | . | -0.036844 |
| -0.031557 | . | -0.02793 |
| 0.0045627 | . | -0.007834 |
| 0.013227 | . | -0.003786 |
| -0.011524 | . | -0.016107 |
| -0.013739 | . | -0.015064 |
| -0.016019 | . | -0.01688 |
| -0.018448 | . | -0.018935 |
| -0.006798 | . | 0.0028605 |
| -0.004618 | . | -0.009984 |
| -0.012765 | . | -0.03756 |
| -0.012009 | . | -0.039555 |
| -0.000354 | . | -0.040934 |
| -0.038888 | . | -0.041528 |
| -0.011318 | . | -0.033282 |
| -0.042684 | . | -0.050112 |
| -0.04121 | . | -0.053679 |
| -0.008425 | . | -0.047125 |
| 0.0059953 | . | -0.033608 |
| -0.028806 | . | -0.052252 |
| 0.0044086 | . | -0.036532 |
| 0.0408015 | . | -0.034435 |
| 0.0194378 | . | -0.03992 |
| 0.0515568 | . | -0.041442 |
| 0.0442347 | . | -0.044025 |
| 0.0477684 | . | -0.063209 |
| 0.0440859 | . | -0.055378 |

| p | q | pm |
|---|---|---|
| 0.0520787 | . | -0.057481 |
| 0.0754331 | . | -0.061835 |
| 0.0648349 | . | -0.061401 |
| 0.0714509 | . | -0.064445 |
| 0.0361511 | . | -0.053406 |
| 0.0501455 | . | -0.055038 |
| 0.0514505 | . | -0.052116 |
| 0.0555513 | . | -0.054396 |
| 0.0193479 | . | -0.055482 |
| 0.0438298 | . | -0.065277 |
| 0.0453949 | . | -0.041122 |
| 0.0679059 | . | -0.039614 |
| 0.0912769 | . | -0.032007 |
| 0.0695199 | . | -0.044863 |
| 0.0549004 | . | -0.038952 |
| 0.0641716 | . | -0.031166 |
| 0.0949095 | . | -0.021859 |
| 0.1189226 | . | -0.012224 |
| 0.1430347 | . | 0.0072769 |
| 0.1512217 | . | 0.0127383 |
| 0.1301723 | . | 0.0089363 |
| 0.1664461 | . | 0.0196882 |
| 0.1269482 | . | -0.001754 |
| 0.1323212 | . | -0.015467 |
| 0.0816746 | . | -0.024122 |
| 0.0585339 | . | -0.037795 |
| 0.0544514 | . | -0.046466 |

| p | q | pm |
|---|---|---|
| 0.0970328 | . | -0.030315 |
| 0.0724449 | . | -0.029508 |
| 0.0943606 | . | -0.031775 |
| 0.0739545 | . | -0.028929 |
| 0.0997005 | . | -0.02649 |
| 0.0807662 | . | -0.035814 |
| 0.0631385 | . | -0.041629 |
| 0.0813231 | . | -0.053091 |
| 0.0825435 | . | -0.047449 |
| 0.046005 | . | -0.061416 |
| 0.0111675 | . | -0.080781 |
| 0.0347137 | . | -0.081786 |
| 0.0445886 | . | -0.065625 |
| 0.0560962 | . | -0.059983 |
| 0.0513715 | . | -0.044777 |
| 0.0453157 | . | -0.049938 |
| 0.0293596 | . | -0.050959 |
| 0.0024771 | . | -0.066619 |
| -0.009609 | . | -0.064677 |

| **Sweep:** | 500 |
|---|---|

| **Sweep:** | 1000 |
|---|---|

| **Sweep:** | 1500 |
|---|---|

| **Sweep:** | 2000 |
|---|---|

| | |
|---|---|
| **Sweep:** | 2500 |

| | |
|---|---|
| **Sweep:** | 3000 |

| | |
|---|---|
| **Sweep:** | 3500 |

| | |
|---|---|
| **Sweep:** | 4000 |

| | |
|---|---|
| **Sweep:** | 4500 |

| | |
|---|---|
| **Sweep:** | 5000 |

| | |
|---|---|
| **Sweep:** | 5500 |

| | |
|---|---|
| **Sweep:** | 6000 |

| | |
|---|---|
| **Sweep:** | 6500 |

| | |
|---|---|
| **Sweep:** | 7000 |

| | |
|---|---|
| **Sweep:** | 7500 |

| | |
|---|---|
| **Sweep:** | 8000 |

| | |
|---|---|
| **Sweep:** | 8500 |

| | |
|---|---|
| **Sweep:** | 9000 |

| | |
|---|---|
| **Sweep:** | 9500 |

| | |
|---|---|
| **Sweep:** | 10000 |

*The SAS System*

*The MEANS Procedure*

| Variable | N | Mean | Std Dev | Minimum | Maximum |
|---|---|---|---|---|---|
| pm | 100 | -0.0332463 | 0.0215460 | -0.0817855 | 0.0196882 |
| q | 100 | 0.1000000 | 1.0000000 | -1.0000000 | 1.0000000 |
| p | 100 | 0.0235788 | 0.0556965 | -0.0975933 | 0.1664461 |
| r | 99 | -0.000189642 | 0.0225669 | -0.0506466 | 0.0425814 |
| rm | 99 | -0.000686197 | 0.0104178 | -0.0275755 | 0.0241557 |

*The SAS System*

*The REG Procedure*
*Model: MODEL1*
*Dependent Variable: r*

| | |
|---|---|
| **Number of Observations Read** | 100 |
| **Number of Observations Used** | 99 |
| **Number of Observations with Missing Values** | 1 |

**Note:** No intercept in model. R-Square is redefined.

| Analysis of Variance | | | | | |
|---|---|---|---|---|---|
| **Source** | **DF** | **Sum of Squares** | **Mean Square** | **F Value** | **Pr > F** |
| **Model** | 1 | 0.01370 | 0.01370 | 37.06 | <.0001 |
| **Error** | 98 | 0.03622 | 0.00036955 | | |
| **Uncorrected Total** | 99 | 0.04991 | | | |

| | | | |
|---|---|---|---|
| **Root MSE** | 0.01922 | **R-Square** | 0.2744 |
| **Dependent Mean** | -0.00018964 | **Adj R-Sq** | 0.2670 |
| **Coeff Var** | -10137 | | |

| Parameter Estimates | | | | | |
|---|---|---|---|---|---|
| **Variable** | **DF** | **Parameter Estimate** | **Standard Error** | **t Value** | **Pr > \|t\|** |
| **rm** | 1 | 1.13226 | 0.18599 | 6.09 | <.0001 |

*The SAS System*

*The MEANS Procedure*

| Variable | N | Mean | Std Dev | Minimum | Maximum |
|---|---|---|---|---|---|
| SWEEP | 8000 | 6001 | 2310 | 2001 | 10000 |
| SDU | 8000 | 0.0106 | 0.0012 | 0.0075 | 0.0173 |
| C | 8000 | 0.0109 | 0.0009 | 0.0062 | 0.0140 |
| BETA | 8000 | 1.098 | 0.140 | 0.578 | 1.740 |

*The SAS System*

*The UNIVARIATE Procedure*
*Variable: C*

| Moments | | | |
|---|---|---|---|
| **N** | 8000 | **Sum Weights** | 8000 |
| **Mean** | 0.01093963 | **Sum Observations** | 87.5170063 |
| **Std Deviation** | 0.00089039 | **Variance** | 7.92792E-7 |
| **Skewness** | -0.3010665 | **Kurtosis** | 0.53742402 |
| **Uncorrected SS** | 0.96374484 | **Corrected SS** | 0.00634154 |
| **Coeff Variation** | 8.13911333 | **Std Error Mean** | 9.95485E-6 |

| Basic Statistical Measures | | | |
|---|---|---|---|
| **Location** | | **Variability** | |
| **Mean** | 0.010940 | **Std Deviation** | 0.0008904 |
| **Median** | 0.010974 | **Variance** | 7.92792E-7 |
| **Mode** | . | **Range** | 0.00784 |
| | | **Interquartile Range** | 0.00115 |

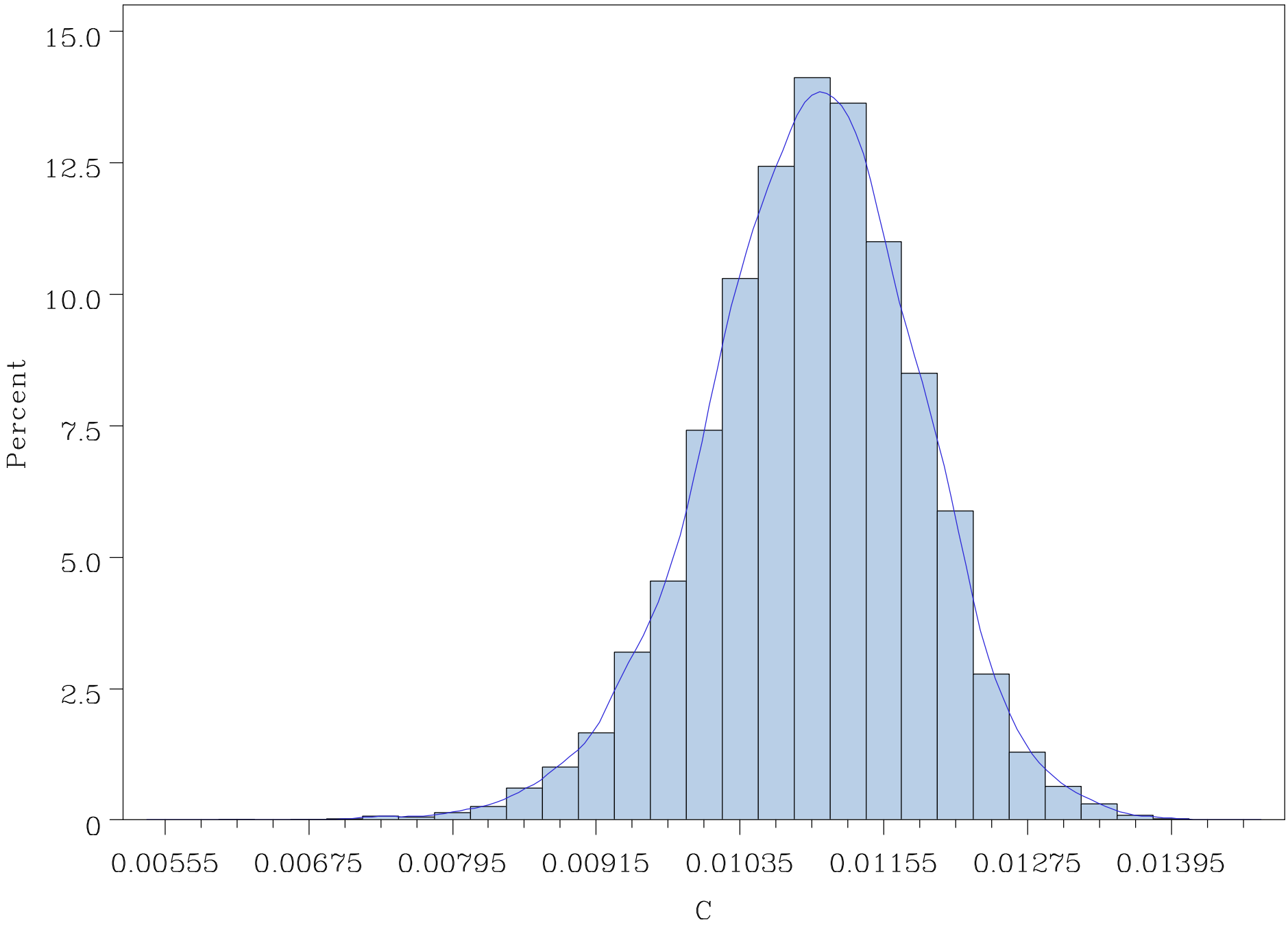
| Tests for Location: Mu0=0 | | | | |
|---|---|---|---|---|
| **Test** | **Statistic** | | **p Value** | |
| **Student's t** | **t** | 1098.925 | **Pr > \|t\|** | <.0001 |
| **Sign** | **M** | 4000 | **Pr >= \|M\|** | <.0001 |
| **Signed Rank** | **S** | 16002000 | **Pr >= \|S\|** | <.0001 |

*The SAS System*

*The UNIVARIATE Procedure*
*Variable: C*

| Quantiles (Definition 5) | |
|---|---|
| **Quantile** | **Estimate** |
| **100% Max** | 0.01401210 |
| **99%** | 0.01291447 |
| **95%** | 0.01230835 |
| **90%** | 0.01204485 |
| **75% Q3** | 0.01153461 |
| **50% Median** | 0.01097359 |
| **25% Q1** | 0.01038164 |
| **10%** | 0.00979653 |
| **5%** | 0.00940858 |
| **1%** | 0.00861575 |
| **0% Min** | 0.00617503 |

| Extreme Observations | | | |
|---|---|---|---|
| **Lowest** | | **Highest** | |
| **Value** | **Obs** | **Value** | **Obs** |
| 0.00617503 | 2037 | 0.0137682 | 5750 |
| 0.00668336 | 2036 | 0.0137734 | 3906 |
| 0.00713045 | 2035 | 0.0137898 | 2711 |
| 0.00717720 | 4008 | 0.0139602 | 2574 |
| 0.00727770 | 4521 | 0.0140121 | 6429 |


15.0
12.5
10.0
7.5
5.0
2.5
0
Percent
0.00555
0.00675
0.00795
0.00915
0.01035
0.01155
0.01275
0.01395
C

*The SAS System*

*The UNIVARIATE Procedure*
*Variable: SDU*

| Moments | | | |
|---|---|---|---|
| **N** | 8000 | **Sum Weights** | 8000 |
| **Mean** | 0.01059957 | **Sum Observations** | 84.7965362 |
| **Std Deviation** | 0.00119603 | **Variance** | 1.43048E-6 |
| **Skewness** | 0.73256186 | **Kurtosis** | 0.88243546 |
| **Uncorrected SS** | 0.91024898 | **Corrected SS** | 0.01144241 |
| **Coeff Variation** | 11.2837342 | **Std Error Mean** | 0.00001337 |

| Basic Statistical Measures | | | |
|---|---|---|---|
| **Location** | | **Variability** | |
| **Mean** | 0.010600 | **Std Deviation** | 0.00120 |
| **Median** | 0.010449 | **Variance** | 1.43048E-6 |
| **Mode** | . | **Range** | 0.00981 |
| | | **Interquartile Range** | 0.00154 |

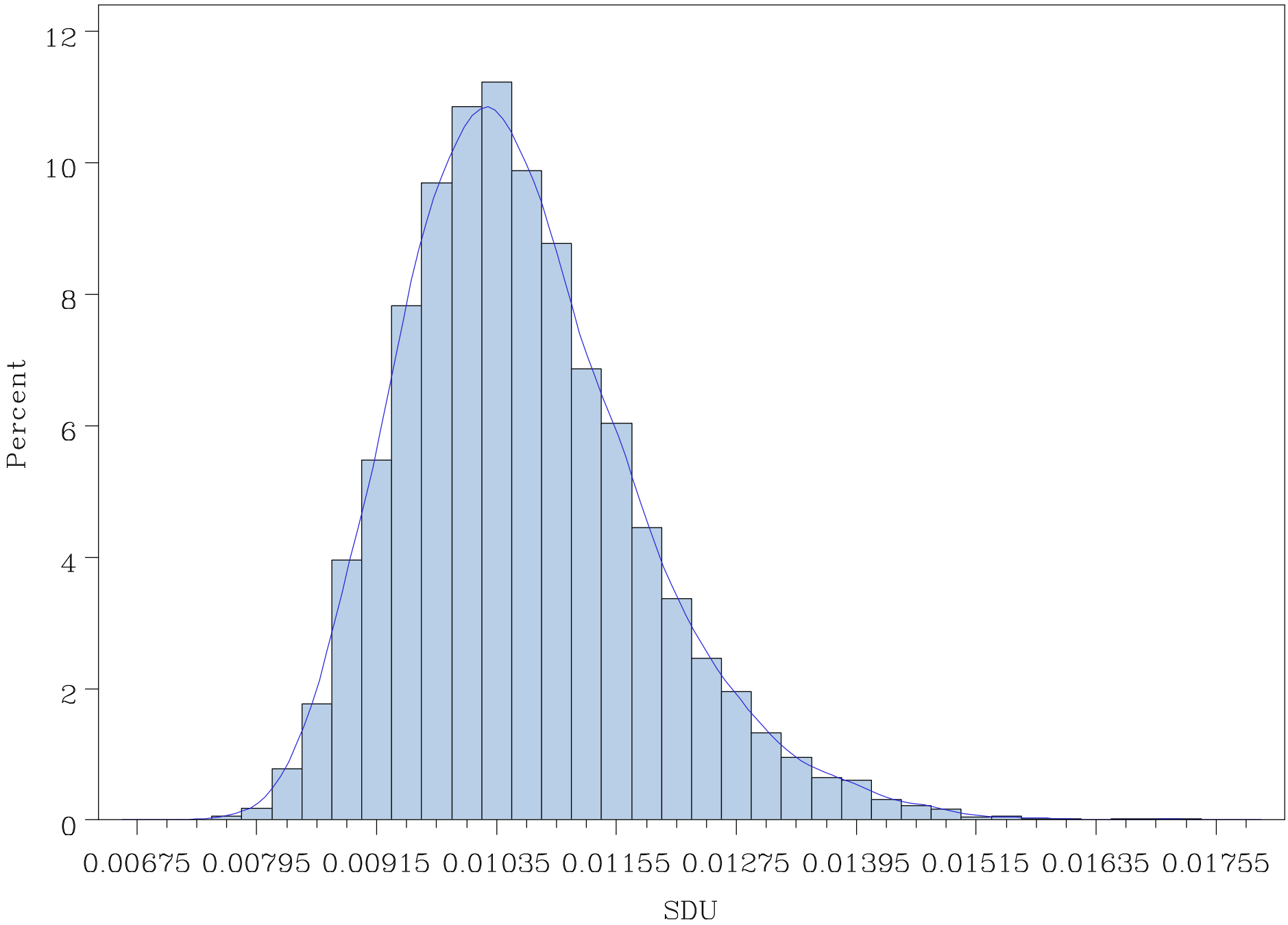
| Tests for Location: Mu0=0 | | | | |
|---|---|---|---|---|
| **Test** | **Statistic** | | **p Value** | |
| **Student's t** | **t** | 792.6695 | **Pr > \|t\|** | <.0001 |
| **Sign** | **M** | 4000 | **Pr >= \|M\|** | <.0001 |
| **Signed Rank** | **S** | 16002000 | **Pr >= \|S\|** | <.0001 |

*The SAS System*

*The UNIVARIATE Procedure*
*Variable: SDU*

| Quantiles (Definition 5) | |
|---|---|
| **Quantile** | **Estimate** |
| **100% Max** | 0.01730967 |
| **99%** | 0.01401921 |
| **95%** | 0.01279154 |
| **90%** | 0.01218303 |
| **75% Q3** | 0.01129153 |
| **50% Median** | 0.01044921 |
| **25% Q1** | 0.00974935 |
| **10%** | 0.00919937 |
| **5%** | 0.00888962 |
| **1%** | 0.00839844 |
| **0% Min** | 0.00750120 |

| Extreme Observations | | | |
|---|---|---|---|
| **Lowest** | | **Highest** | |
| **Value** | **Obs** | **Value** | **Obs** |
| 0.00750120 | 9013 | 0.0158984 | 6657 |
| 0.00759429 | 4606 | 0.0159278 | 6336 |
| 0.00769288 | 3282 | 0.0166997 | 9847 |
| 0.00775210 | 7940 | 0.0170212 | 2880 |
| 0.00779251 | 6202 | 0.0173097 | 3999 |


Percent
0
2
4
6
8
10
12
0.00675
0.00795
0.00915
0.01035
0.01155
0.01275
0.01395
0.01515
0.01635
0.01755
SDU

*The SAS System*

*The UNIVARIATE Procedure*
*Variable: BETA*

| Moments | | | |
|---|---|---|---|
| **N** | 8000 | **Sum Weights** | 8000 |
| **Mean** | 1.09844729 | **Sum Observations** | 8787.57834 |
| **Std Deviation** | 0.1399757 | **Variance** | 0.0195932 |
| **Skewness** | 0.07827173 | **Kurtosis** | 0.13594167 |
| **Uncorrected SS** | 9809.41761 | **Corrected SS** | 156.725969 |
| **Coeff Variation** | 12.7430507 | **Std Error Mean** | 0.00156498 |

| Basic Statistical Measures | | | |
|---|---|---|---|
| **Location** | | **Variability** | |
| **Mean** | 1.098447 | **Std Deviation** | 0.13998 |
| **Median** | 1.097082 | **Variance** | 0.01959 |
| **Mode** | . | **Range** | 1.16148 |
| | | **Interquartile Range** | 0.18465 |

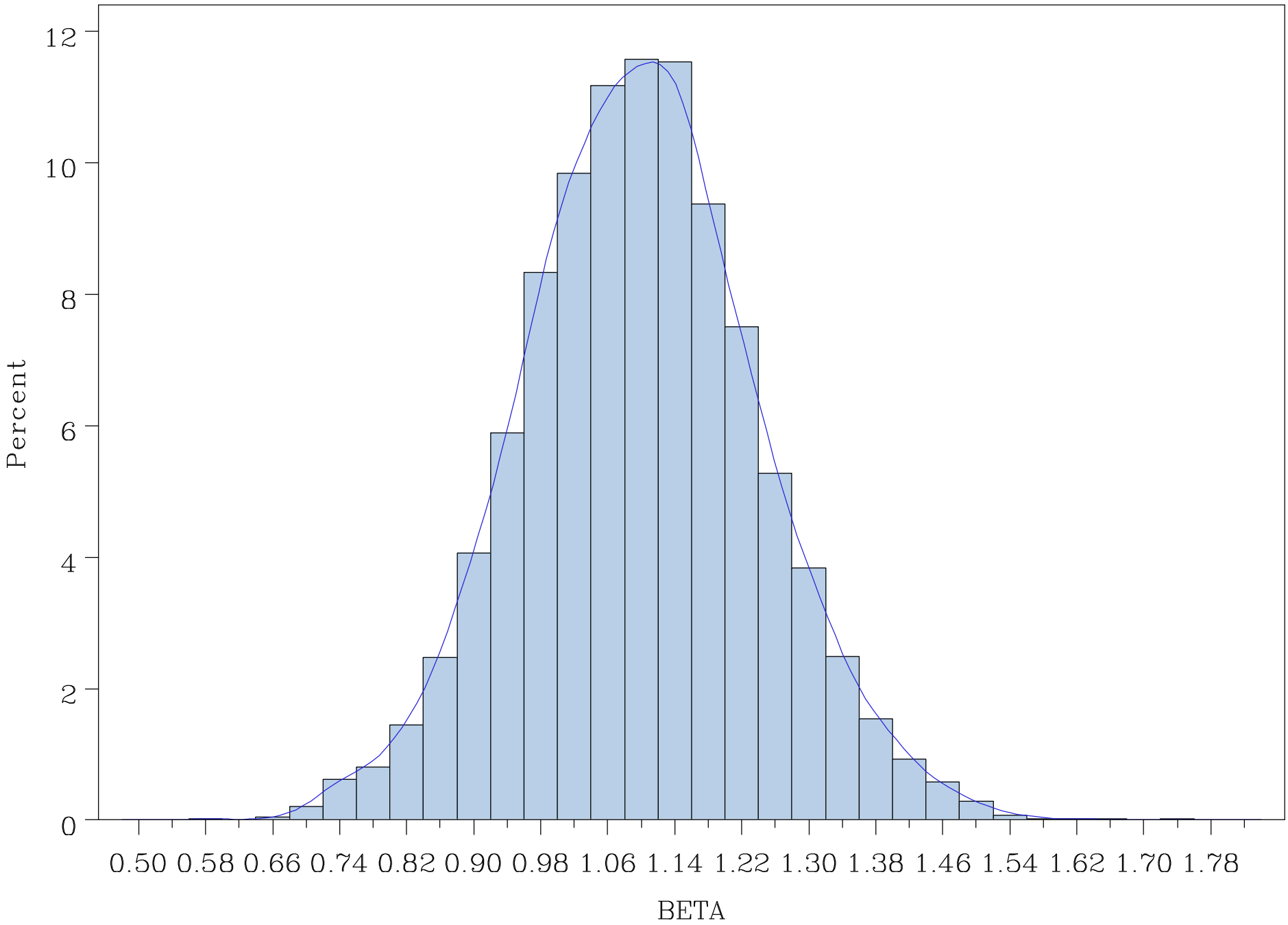
| Tests for Location: Mu0=0 | | | | |
|---|---|---|---|---|
| **Test** | **Statistic** | | **p Value** | |
| **Student's t** | **t** | 701.8941 | **Pr > \|t\|** | <.0001 |
| **Sign** | **M** | 4000 | **Pr >= \|M\|** | <.0001 |
| **Signed Rank** | **S** | 16002000 | **Pr >= \|S\|** | <.0001 |

*The SAS System*

*The UNIVARIATE Procedure*
*Variable: BETA*

| Quantiles (Definition 5) | |
|---|---|
| **Quantile** | **Estimate** |
| **100% Max** | 1.739768 |
| **99%** | 1.439139 |
| **95%** | 1.333883 |
| **90%** | 1.277818 |
| **75% Q3** | 1.189426 |
| **50% Median** | 1.097082 |
| **25% Q1** | 1.004772 |
| **10%** | 0.922670 |
| **5%** | 0.871066 |
| **1%** | 0.766079 |
| **0% Min** | 0.578288 |

| Extreme Observations | | | |
|---|---|---|---|
| **Lowest** | | **Highest** | |
| **Value** | **Obs** | **Value** | **Obs** |
| 0.578288 | 4283 | 1.56668 | 2070 |
| 0.592941 | 9320 | 1.56842 | 8664 |
| 0.663437 | 7320 | 1.61722 | 6470 |
| 0.672237 | 7139 | 1.64271 | 9316 |
| 0.675034 | 3615 | 1.73977 | 6332 |


12
10
8
6
4
2
0
Percent
0.50 0.58 0.66 0.74 0.82 0.90 0.98 1.06 1.14 1.22 1.30 1.38 1.46 1.54 1.62 1.70 1.78
BETA

*The SAS System*

*The KDE Procedure*

| Inputs | |
|---|---|
| **Data Set** | WORK.PARMOUT |
| **Number of Observations Used** | 8000 |
| **Variable 1** | SDU |
| **Variable 2** | C |
| **Bandwidth Method** | Simple Normal Reference |

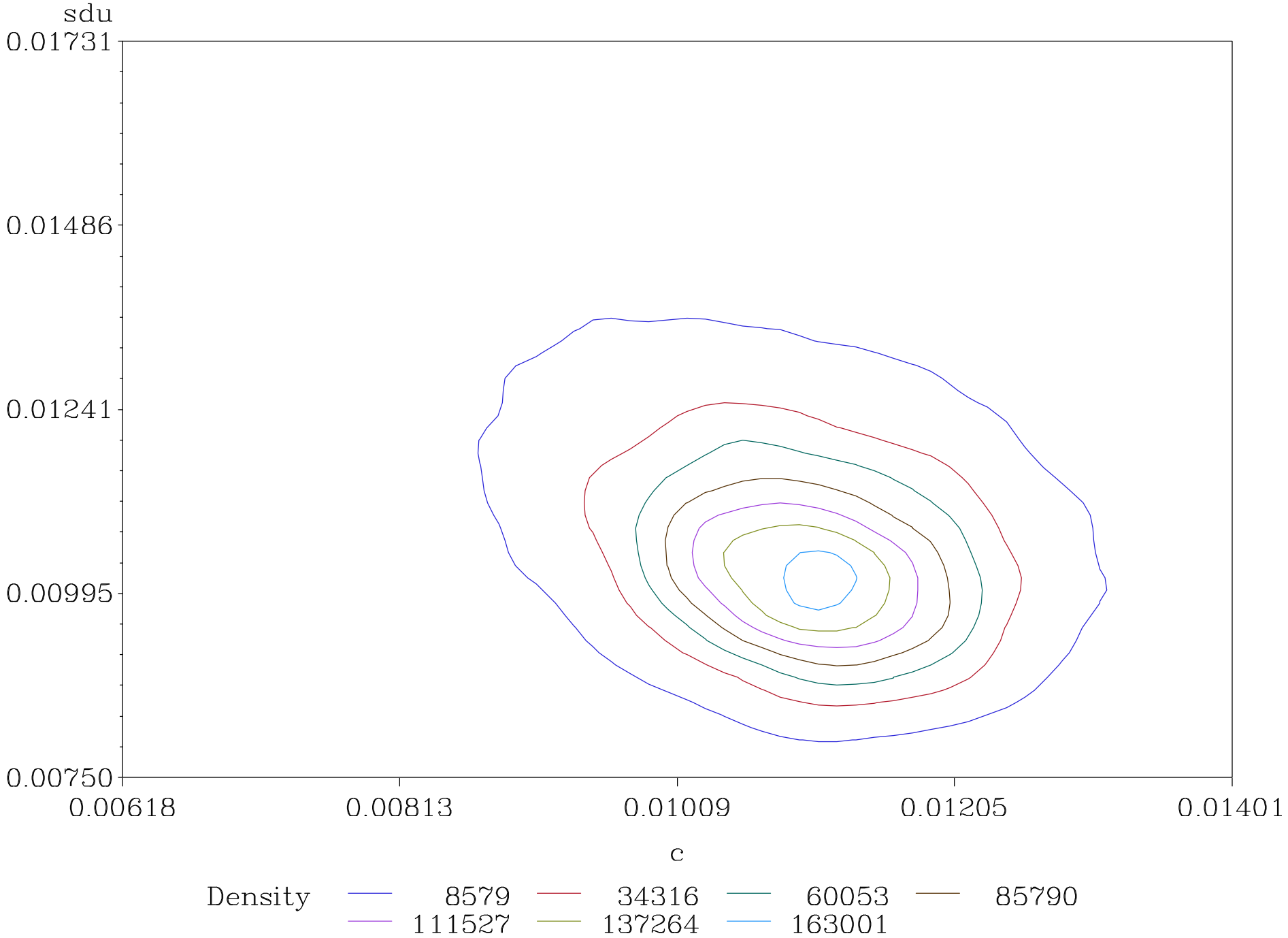
| Controls | | |
|---|---|---|
| | **SDU** | **C** |
| **Grid Points** | 60 | 60 |
| **Lower Grid Limit** | 0.0075 | 0.0062 |
| **Upper Grid Limit** | 0.0173 | 0.014 |
| **Bandwidth Multiplier** | 1 | 1 |

| Levels | | | | | |
|---|---|---|---|---|---|
| **Percent** | **Density** | **Lower for SDU** | **Upper for SDU** | **Lower for C** | **Upper for C** |
| **1** | 1840.36 | 0.0075 | 0.015 | 0.0078 | 0.014 |
| **5** | 8175.85 | 0.0078 | 0.014 | 0.0086 | 0.013 |
| **10** | 15874 | 0.0082 | 0.013 | 0.0090 | 0.013 |
| **50** | 84694 | 0.0088 | 0.012 | 0.0099 | 0.012 |
| **90** | 156230 | 0.0095 | 0.011 | 0.011 | 0.011 |
| **95** | 163576 | 0.0097 | 0.011 | 0.011 | 0.011 |

*The SAS System*

*The KDE Procedure*

| Levels | | | | | |
|---|---|---|---|---|---|
| **Percent** | **Density** | **Lower for SDU** | **Upper for SDU** | **Lower for C** | **Upper for C** |
| **99** | 170517 | 0.0098 | 0.010 | 0.011 | 0.011 |
| **100** | 171580 | 0.010 | 0.010 | 0.011 | 0.011 |


Joint posterior with sdu=.01 and c=0.01
sdu
0.01731
0.01486
0.01241
0.00995
0.00750
0.00618
0.00813
0.01009
0.01205
0.01401
c
Density
8579
34316
60053
85790
111527
137264
163001