APPENDIX A
ROC SPACE DISTANCES

Appendix A contains the ROC-space plots for each test case (see Section III), for each α value (3.00, 4.00, 4.25, 4.50, and 5.00). These are used to determine a good value for α, which is used in the proposed approach (II) as a minimum amplitude for notes to be considered as candidate $f_0 s$.
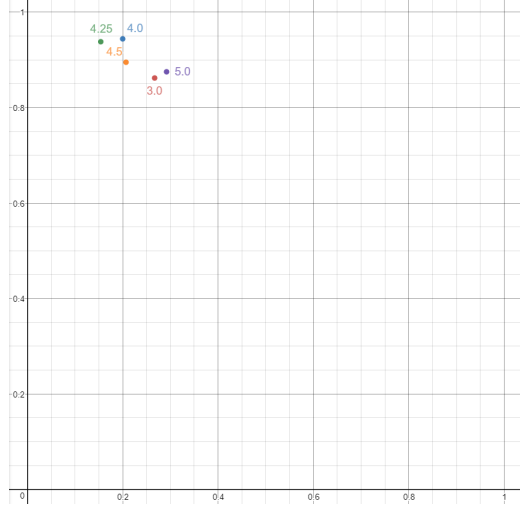

Figure 9. ROC space graph for test case 1

Table IV
TEST CASE 1 - ROC DISTANCES

α Value	Distance to (0,1)
3.00	0.301
4.00	0.208
4.25	0.166
4.50	0.232
5.00	0.318
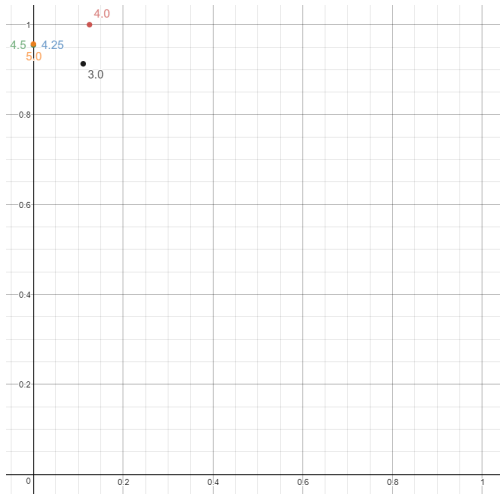
Figure 10. ROC space graph for test case 2

Table V
TEST CASE 2 - ROC DISTANCES

α Value	Distance to (0,1)
3.00	0.141
4.00	0.125
4.25	0.045
4.50	0.045
5.00	0.043
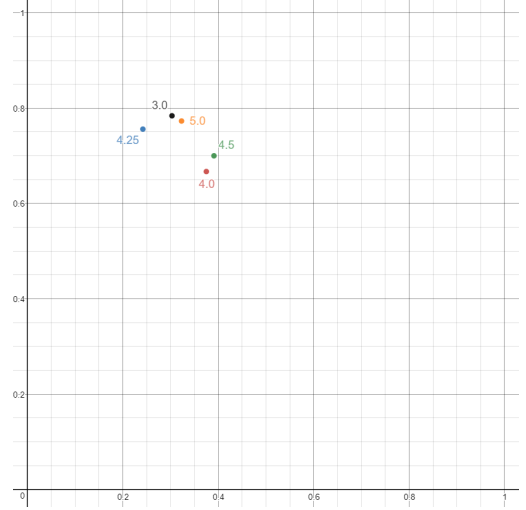
Figure 11. ROC space graph for test case 3

Table VI
TEST CASE 3 - ROC DISTANCES

α Value	Distance to (0,1)
3.00	0.372
4.00	0.502
4.25	0.344
4.50	0.493
5.00	0.395
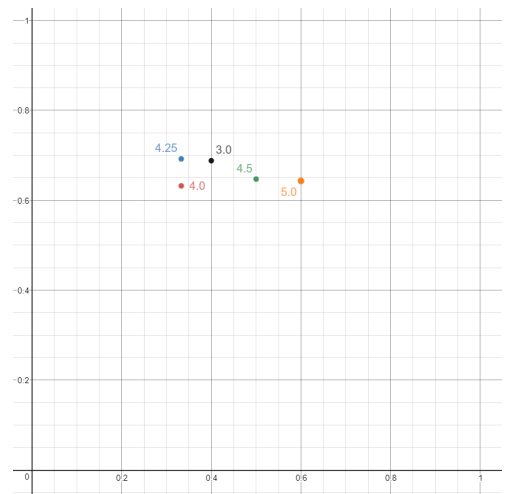
Figure 12. ROC space graph for test case 4

Table VII
TEST CASE 4 - ROC DISTANCES

α Value	Distance to (0,1)
3.00	0.507
4.00	0.496
4.25	0.454
4.50	0.612
5.00	0.698
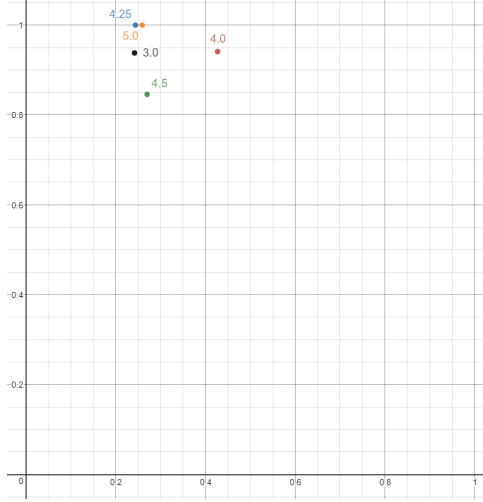
Figure 13. ROC space graph for test case 5

Table VIII
TEST CASE 5 - ROC DISTANCES

α Value	Distance to (0,1)
3.00	0.250
4.00	0.431
4.25	0.244
4.50	0.311
5.00	0.259

APPENDIX B
TEST DATA

Appendix B contains the following metrics, measured for each test case and α value, and averaged across 3 runs,

- True Positive Rate (TPR)
- False Positive Rate (FPR)
- True Negative Rate (TNR)
- False Negative Rate (FNR)
- Precision (PR)
- Recall (RE)
- Specificity (SP)
- Accuracy (A)
- F-Score (F)

the mean, μ, and standard deviation, σ, are also presented for each.

Because of the sheer volume of them, only the tables for $\alpha = 4.25$ are included. The full appendix (and thus the remainder of the tables) can be found at http://tomg.io/appendix-b.pdf and https://github.com/TauOmicronMu/tauomicronmu.github.io/blob/master/appendix-b.pdf

A. Test Case 1

Table IX
$\alpha = 4.25$

	TPR	FPR	TNR	FNR
1	35.00%	17.50%	47.50%	0.00%
2	35.85%	5.66%	56.60%	1.89%
3	37.14%	8.57%	48.57%	5.71%
μ	36.00%	10.58%	50.89%	2.53%
σ	1.08%	6.17%	4.98%	2.91%

	PR	RE	SP	A	F
1	66.67%	100.00%	73.08%	82.50%	80.00%
2	86.36%	95.00%	90.91%	92.45%	90.48%
3	81.25%	86.67%	85.00%	85.71%	83.87%
μ	78.09%	93.89%	83.00%	86.89%	84.78%
σ	10.22%	6.74%	9.08%	5.08%	5.30%

B. Test Case 2

Table X
$\alpha = 4.25$

	TPR	FPR	TNR	FNR
1	70.97%	0.00%	22.58%	6.45%
2	70.00%	0.00%	30.00%	0.00%
3	65.52%	0.00%	34.48%	0.00%
μ	68.83%	0.00%	29.02%	2.15%
σ	2.91%	0.00%	6.01%	3.72%

	PR	RE	SP	A	F
1	100.00%	91.67%	100.00%	93.55%	95.65%
2	100.00%	100.00%	100.00%	100.00%	100.00%
3	100.00%	100.00%	100.00%	100.00%	100.00%
μ	100.00%	97.22%	100.00%	97.85%	98.55%
σ	0.00%	4.81%	0.00%	3.72%	2.51%

C. Test Case 3

Table XI
α = 4.25

	TPR	FPR	TNR	FNR
1	41.77%	8.86%	32.91%	16.46%
2	48.72%	5.13%	34.62%	11.54%
3	42.11%	14.47%	28.95%	14.47%
μ	44.20%	9.49%	32.16%	14.16%
σ	3.92%	4.70%	2.91%	2.47%

	PR	RE	SP	A	F
1	82.50%	71.74%	78.79%	74.68%	76.74%
2	90.48%	80.85%	87.10%	83.33%	85.39%
3	74.42%	74.42%	66.67%	71.05%	74.42%
μ	82.46%	75.67%	77.52%	76.36%	78.85%
σ	8.03%	4.68%	10.27%	6.31%	5.78%

D. Test Case 4

Table XII
α = 4.25

	TPR	FPR	TNR	FNR
1	75.00%	12.50%	12.50%	0.00%
2	48.00%	8.00%	12.00%	32.00%
3	70.00%	10.00%	10.00%	10.00%
μ	64.33%	10.17%	11.50%	14.00%
σ	14.36%	2.25%	1.32%	16.37%

	PR	RE	SP	A	F
1	85.71%	100.00%	50.00%	87.50%	92.31%
2	85.71%	60.00%	60.00%	60.00%	70.59%
3	87.50%	87.50%	50.00%	80.00%	87.50%
μ	86.31%	82.50%	53.33%	75.83%	83.47%
σ	1.03%	20.46%	5.77%	14.22%	11.41%

E. Test Case 5

Table XIII
α = 4.25

	TPR	FPR	TNR	FNR
1	27.03%	22.97%	50.00%	0.00%
2	43.48%	23.91%	32.61%	0.00%
3	52.27%	15.91%	31.82%	0.00%
μ	40.93%	20.93%	38.14%	0.00%
σ	12.81%	4.38%	10.28%	0.00%

	PR	RE	SP	A	F
1	54.05%	100.00%	68.52%	77.03%	70.18%
2	64.52%	100.00%	57.69%	76.09%	78.43%
3	76.67%	100.00%	66.67%	84.09%	86.79%
μ	65.08%	100.00%	64.29%	79.07%	78.47%
σ	11.32%	0.00%	5.79%	4.38%	8.31%