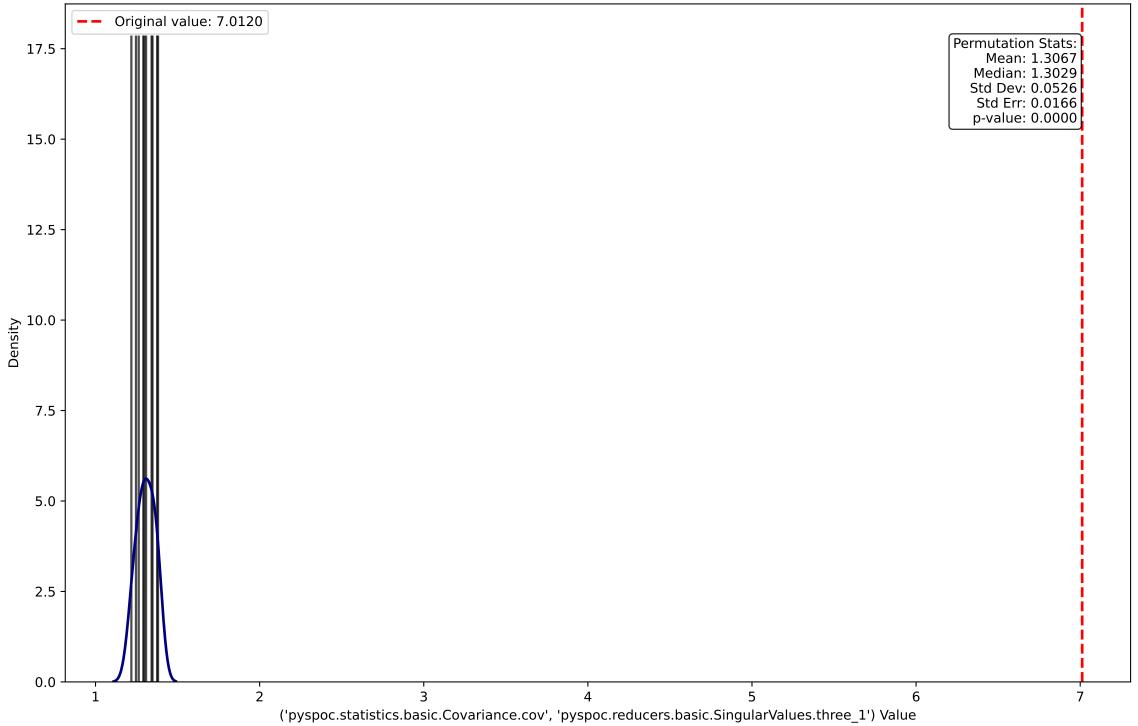
Number of permutations: 10
Number of bootstrap samples: 10
Row bootstrap sample fraction: 90.0%
Column bootstrap sample fraction: 90.0%
Number of perturbations: 10
Scale factor for perturbations: 0.1
Normalization: z-score
Random seed: 42

Permutation Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_1')



Permutation Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_2') Original value: 0.7714 Permutation Stats: Mean: 1.1819 20.0 -Median: 1.1929 Std Dev: 0.0463 Std Err: 0.0146 p-value: 0.0000 17.5 · 15.0 12.5 -Density 10.0 7.5 5.0 2.5

1.1

('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_2') Value

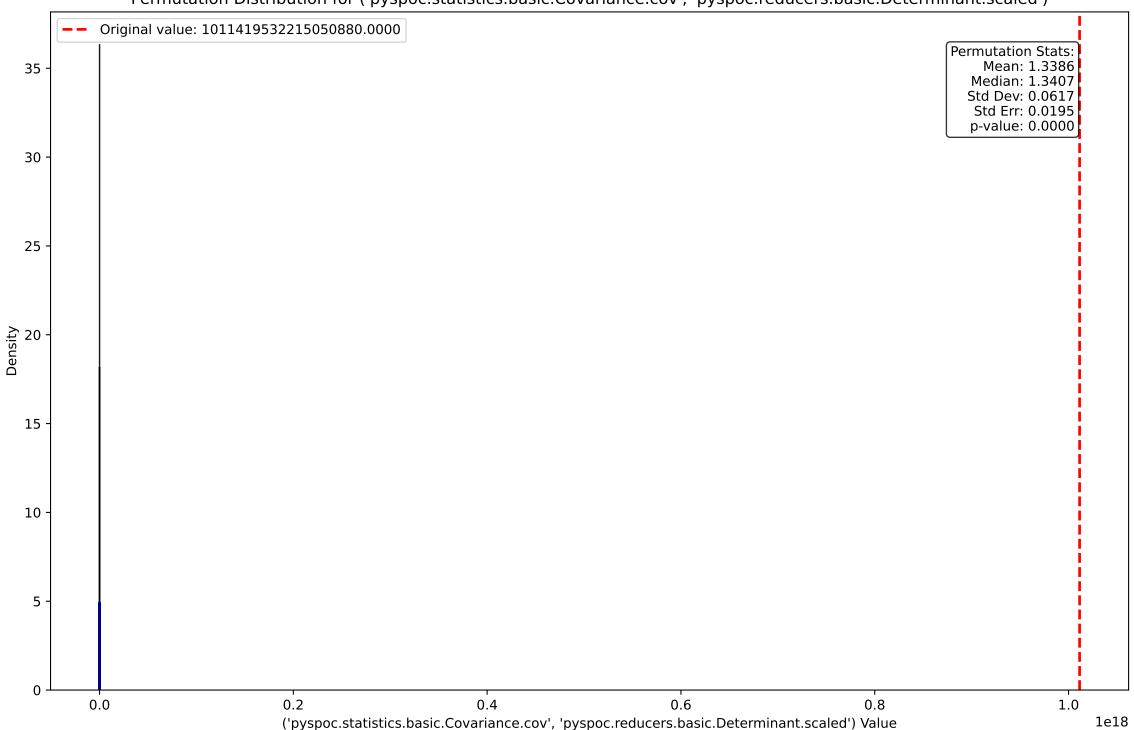
1.0

1.3

0.0

8.0

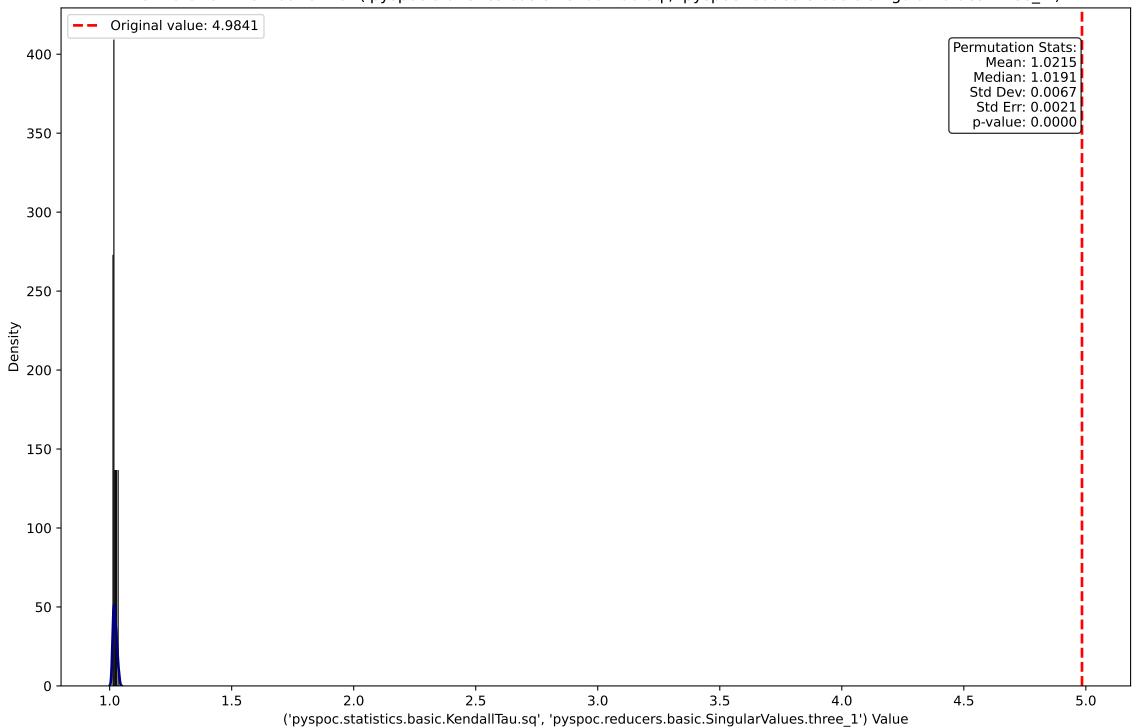
0.9



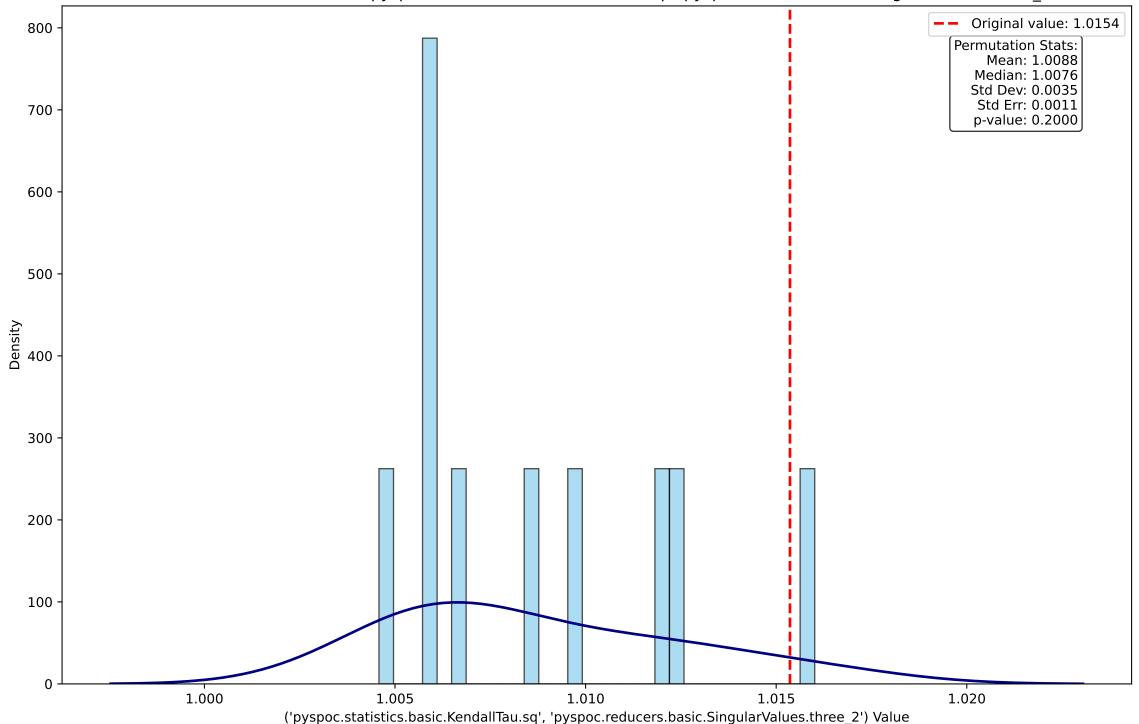
Permutation Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.Determinant.non-scaled') Original value: 0.0000 Permutation Stats: Mean: 0.8650 Median: 0.8637 Std Dev: 0.0201 Std Err: 0.0064 100 p-value: 0.0000 80 Density 60 -40 20 0.2 0.0 0.4 0.6 8.0

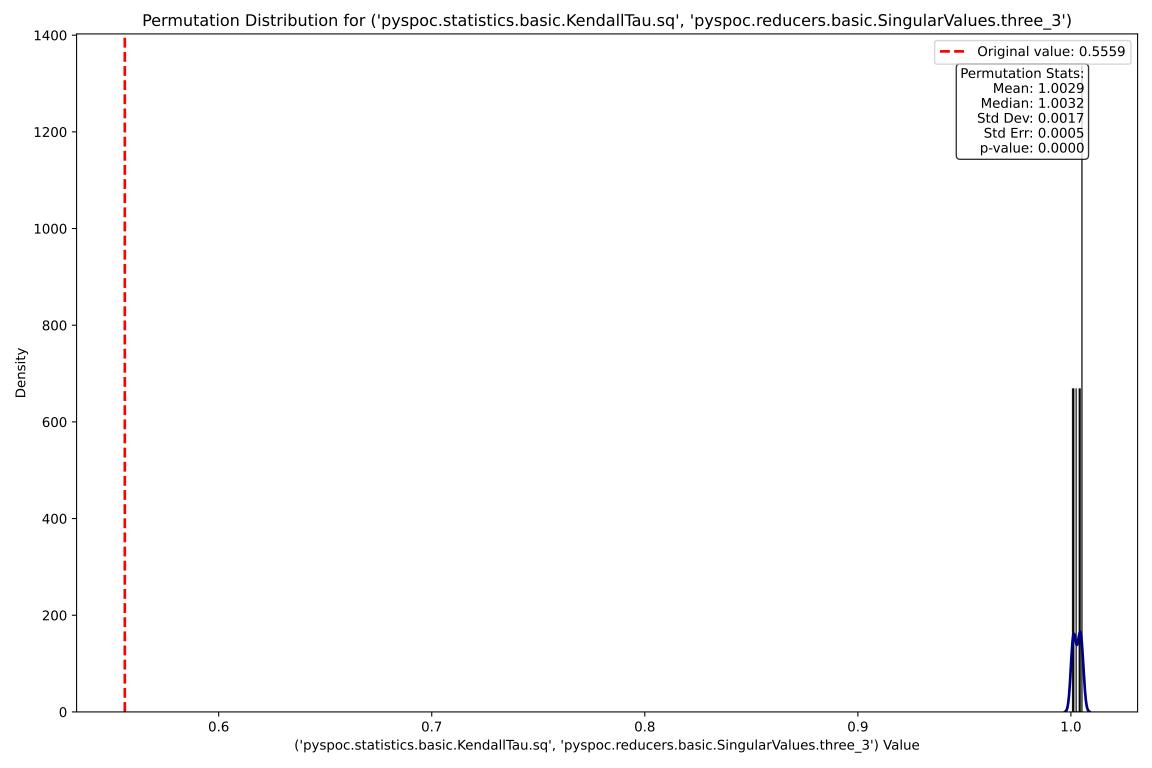
('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.Determinant.non-scaled') Value

Permutation Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_1')



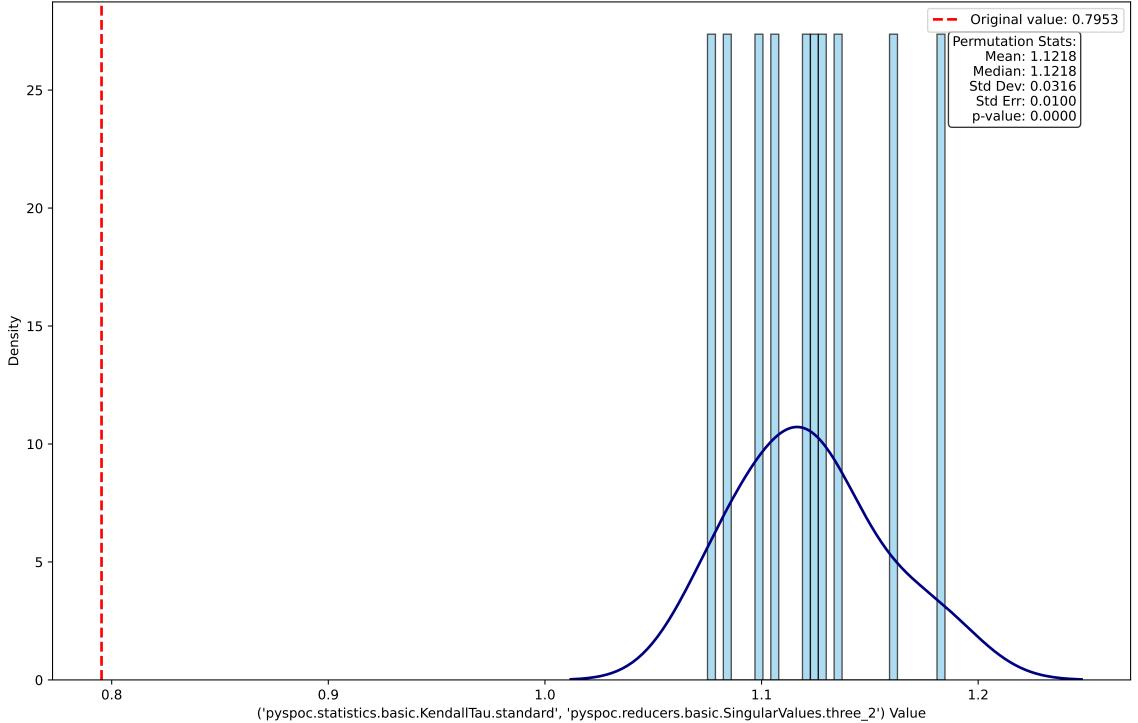
Permutation Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_2')





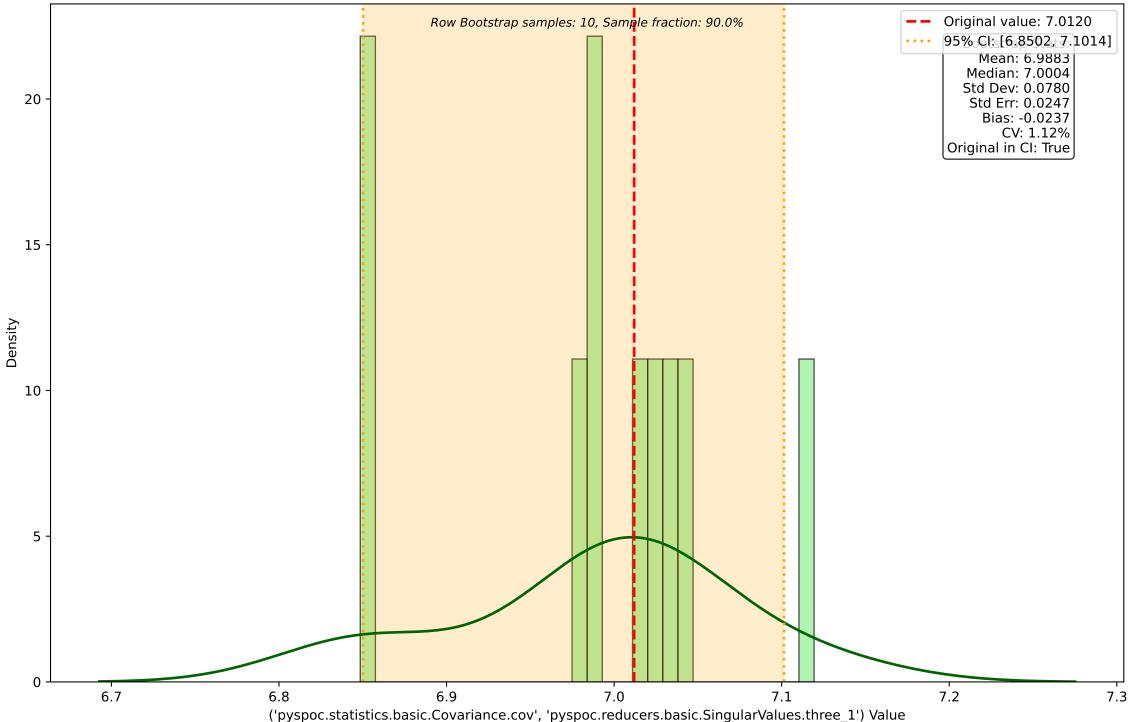
('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_1') Value

Permutation Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_2')

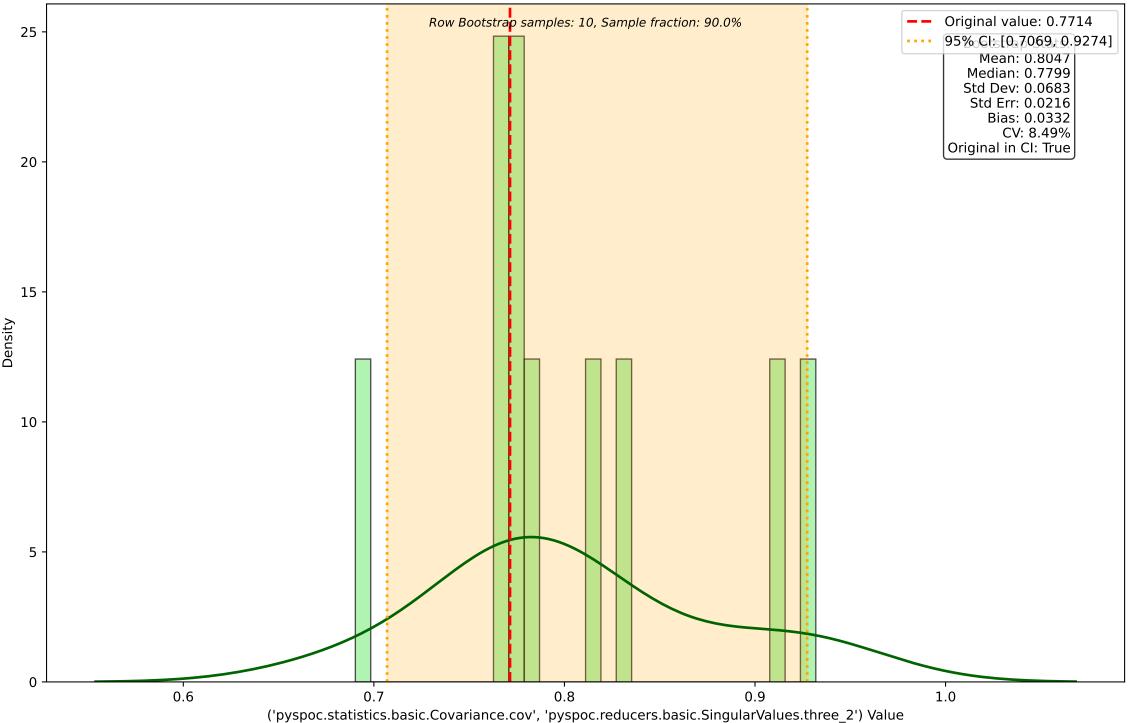


('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_3') Value

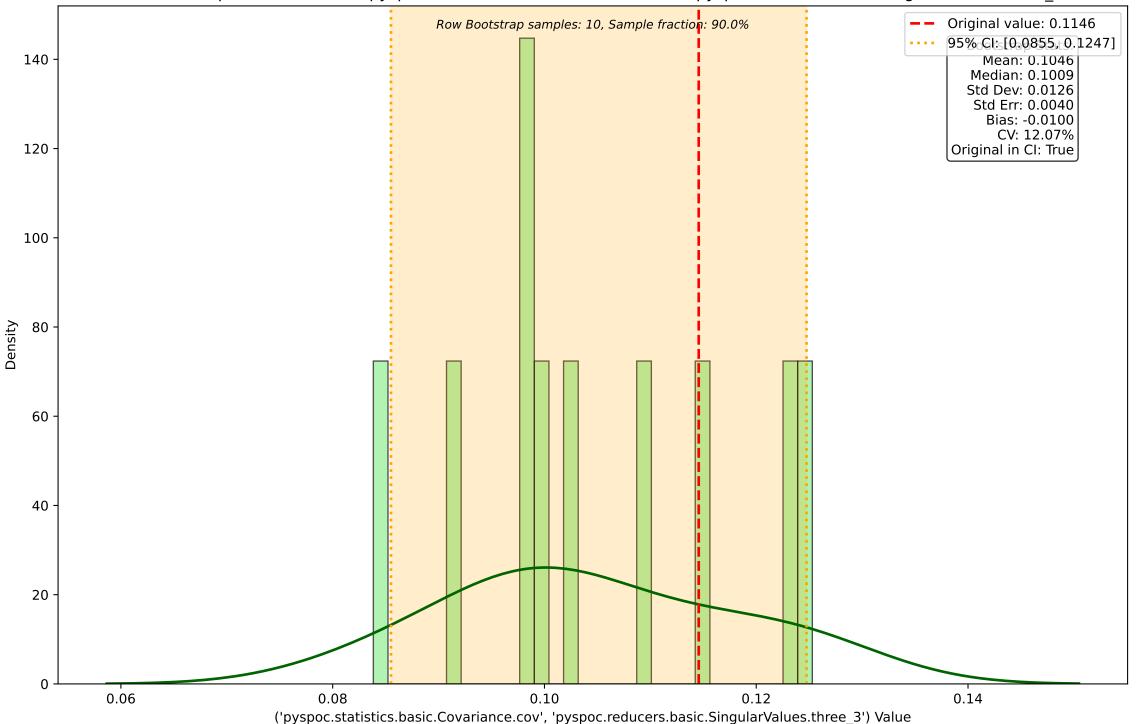
Row Bootstrap Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_1')



Row Bootstrap Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_2')

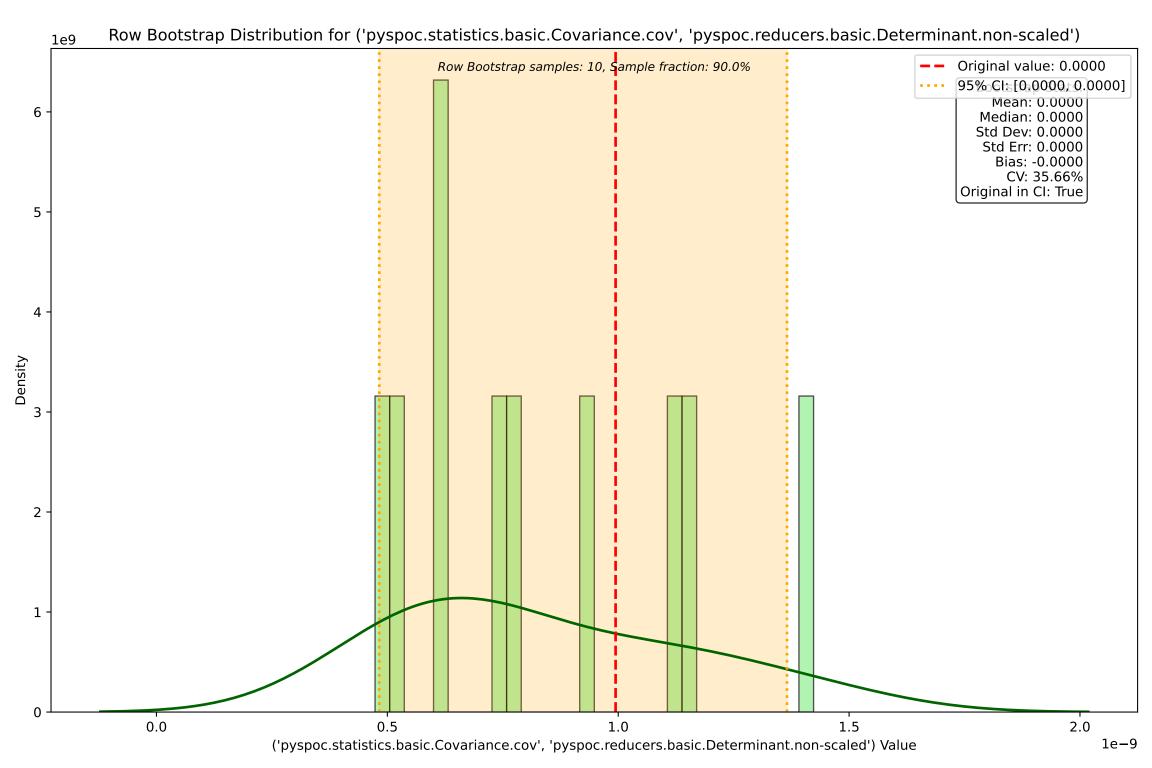


Row Bootstrap Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_3')

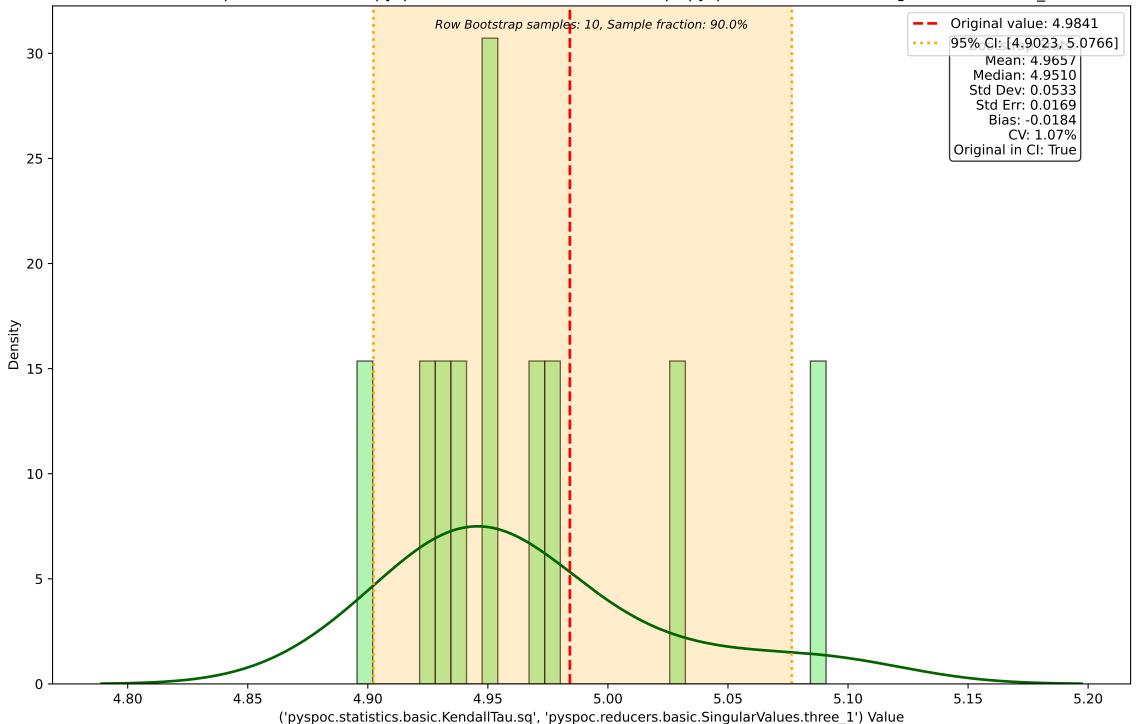


('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.Determinant.scaled') Value

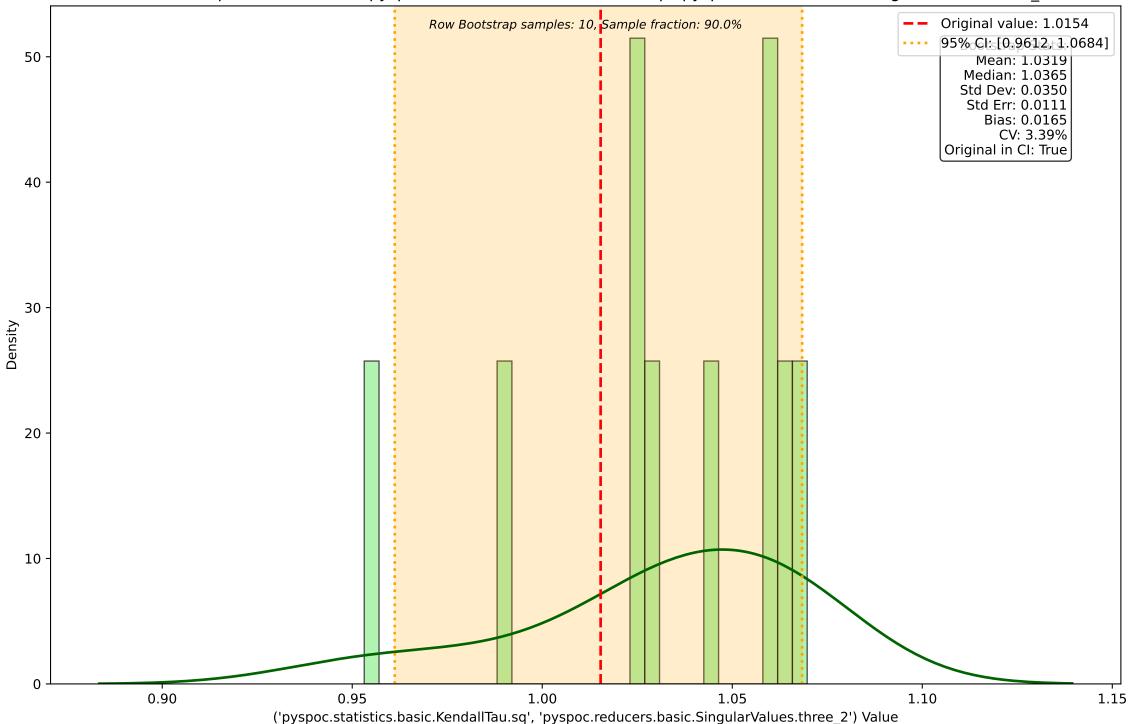
1e18



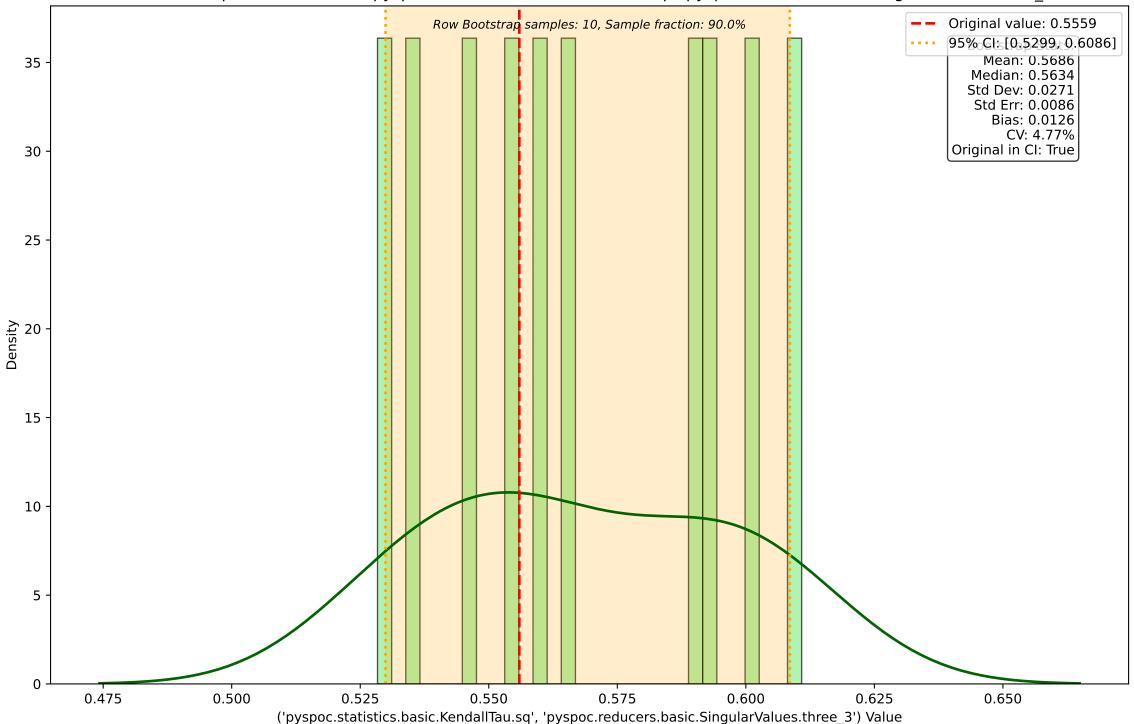
Row Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_1')



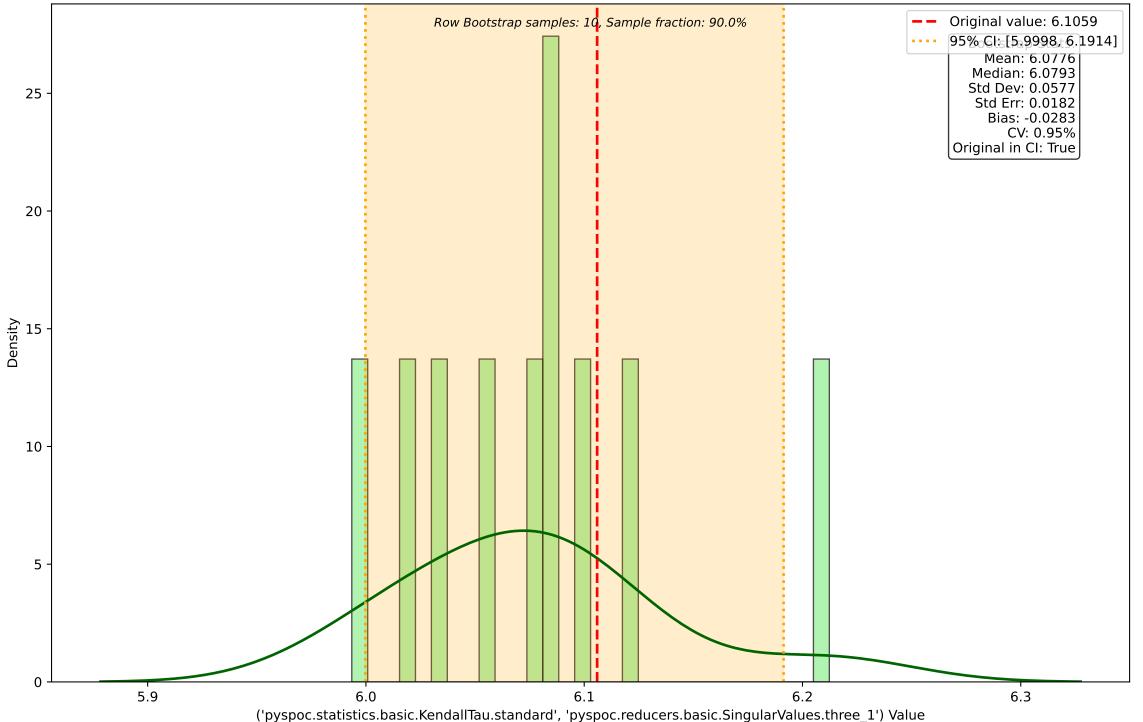
Row Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_2')



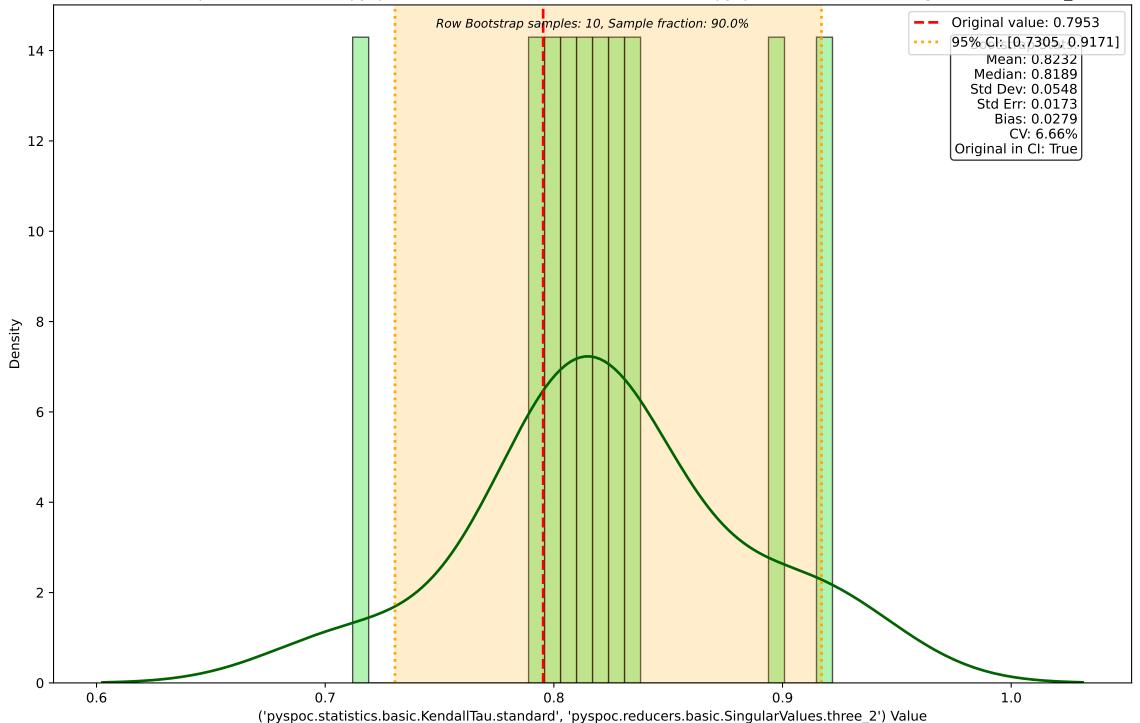
Row Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_3')



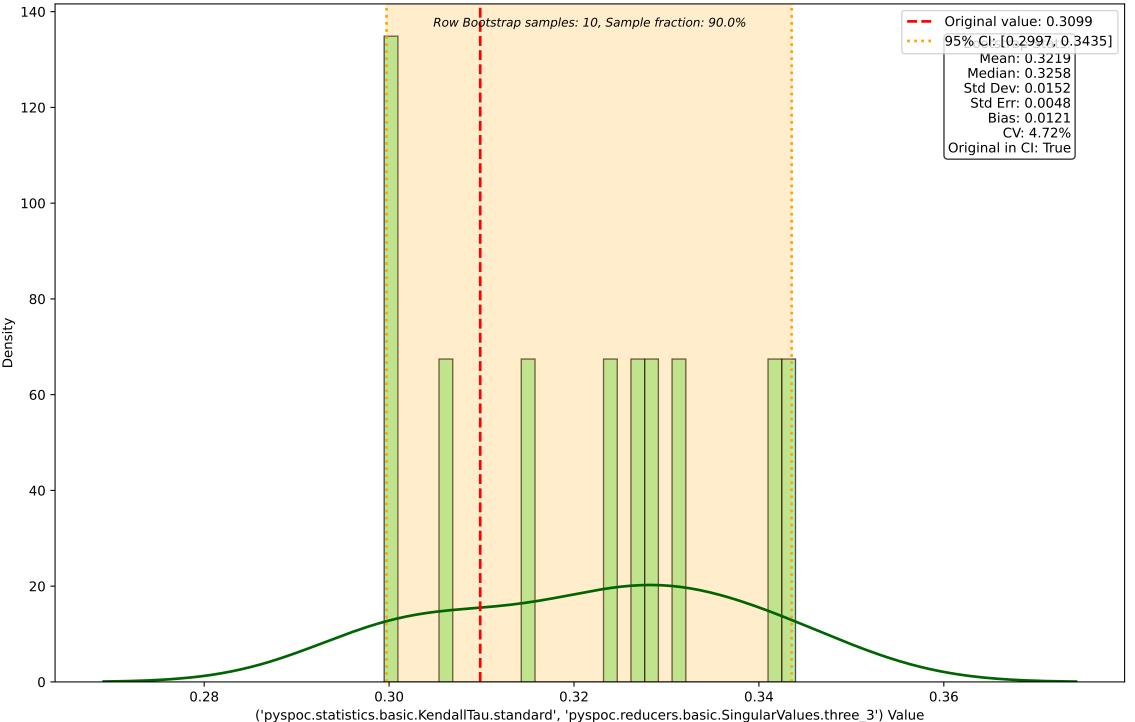
Row Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_1')



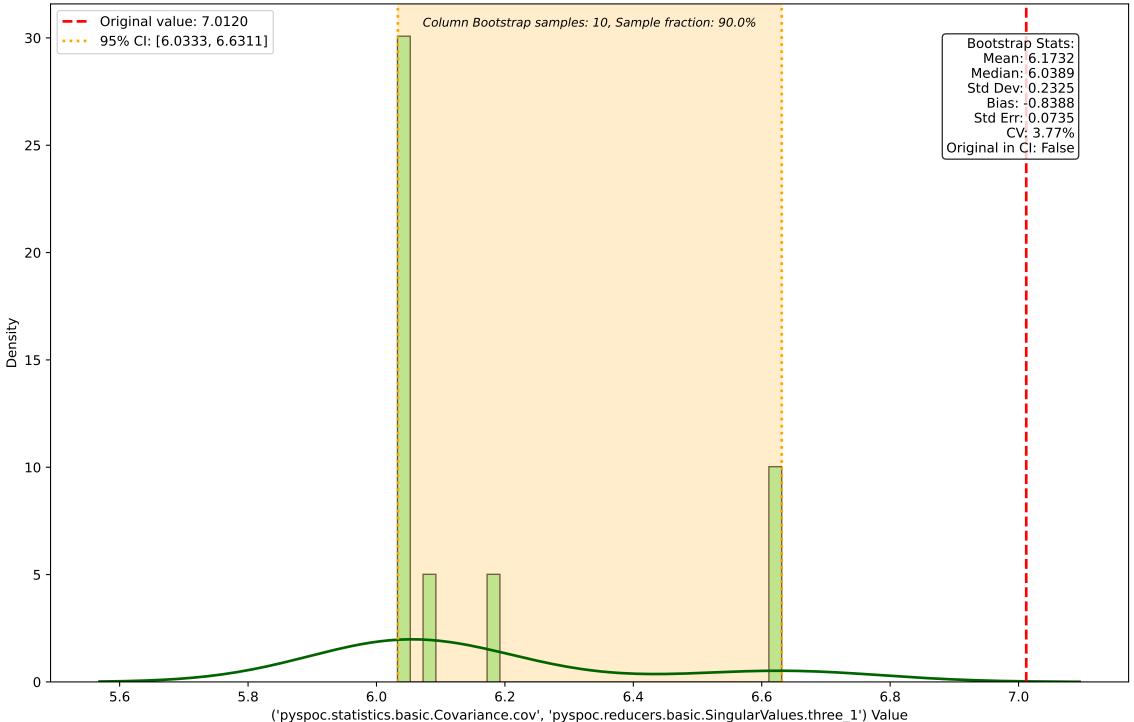
Row Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_2')



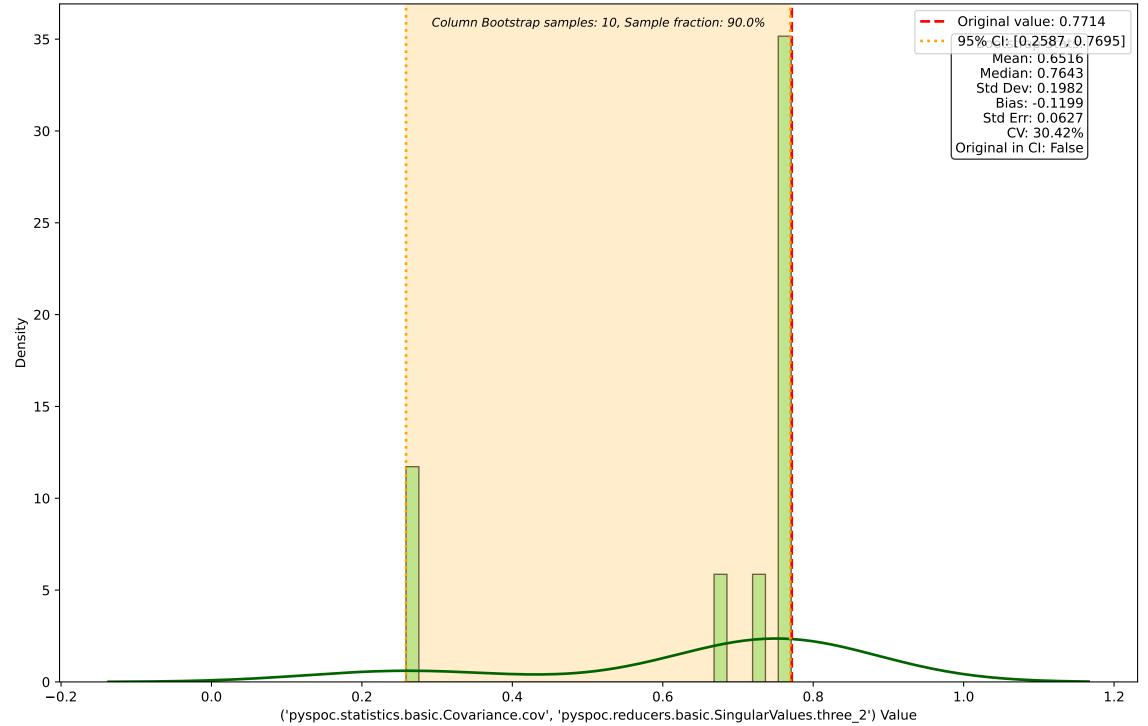
Row Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_3')



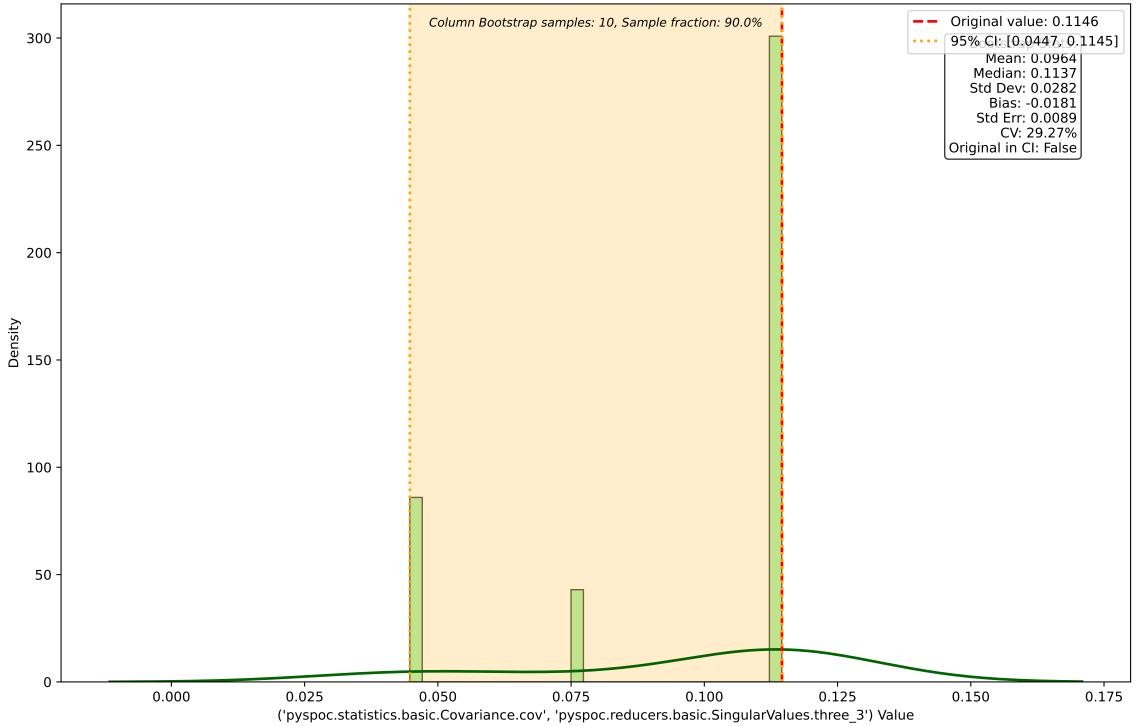
Column Bootstrap Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_1')

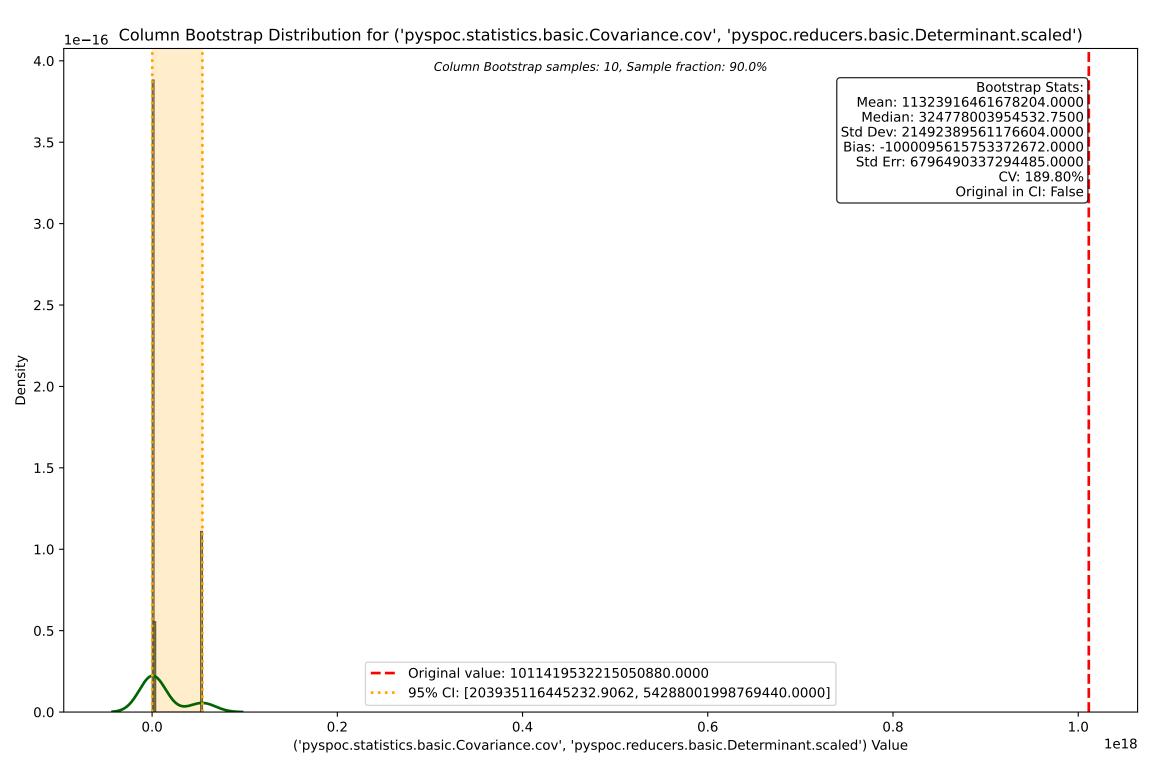


Column Bootstrap Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_2')



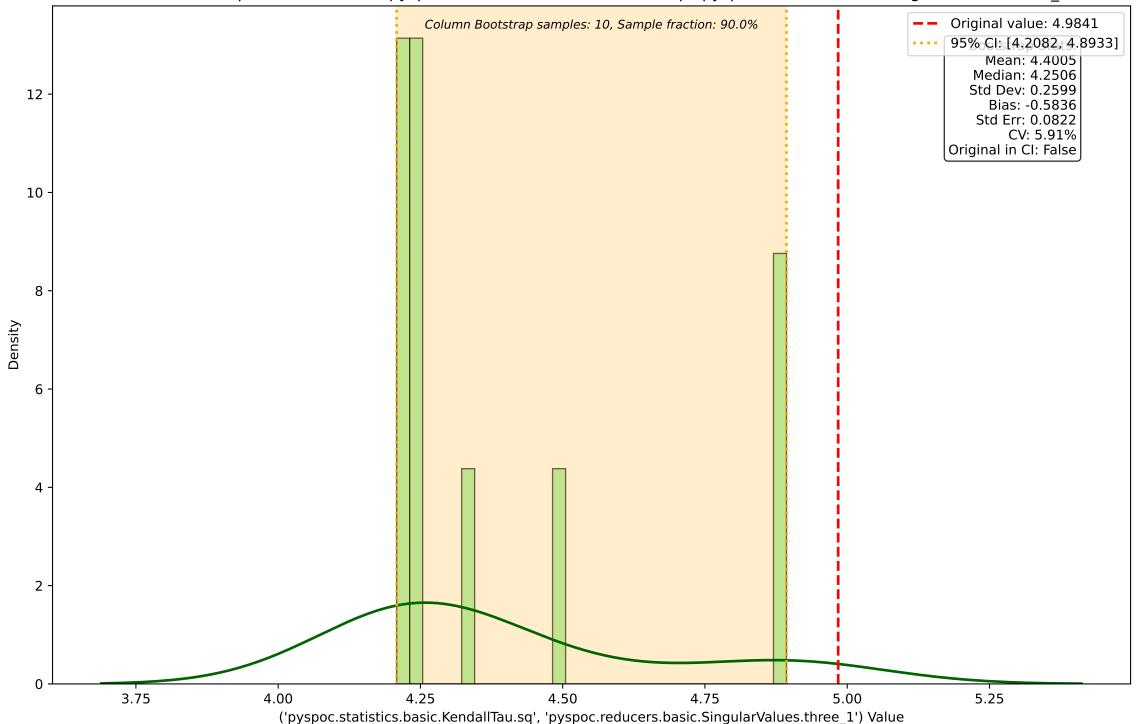
Column Bootstrap Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_3')



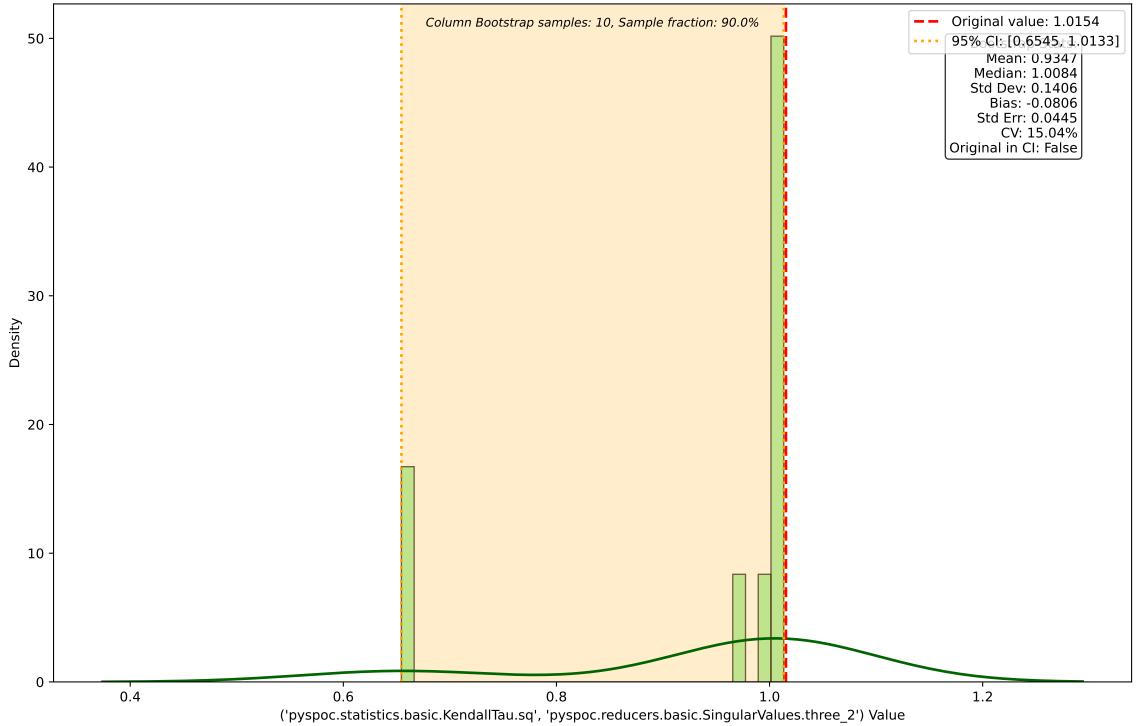


1e8 Column Bootstrap Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.Determinant.non-scaled') Column Bootstrap samples: 10, Sample fraction: 90.0% Original value: 0.0000 95% CI: [0.0000, 0.0000] Mean: 0.0000 Median: 0.0000 Std Dev: 0.0000 1.2 -Bias: 0.0000 Std Err: 0.0000 CV: 54.00% Original in CI: False 1.0 -0.8 -0.6 0.4 -0.2 -0.0 -1.2 -0.4-0.20.2 0.4 0.6 8.0 0.0 1.0 1e-7 ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.Determinant.non-scaled') Value

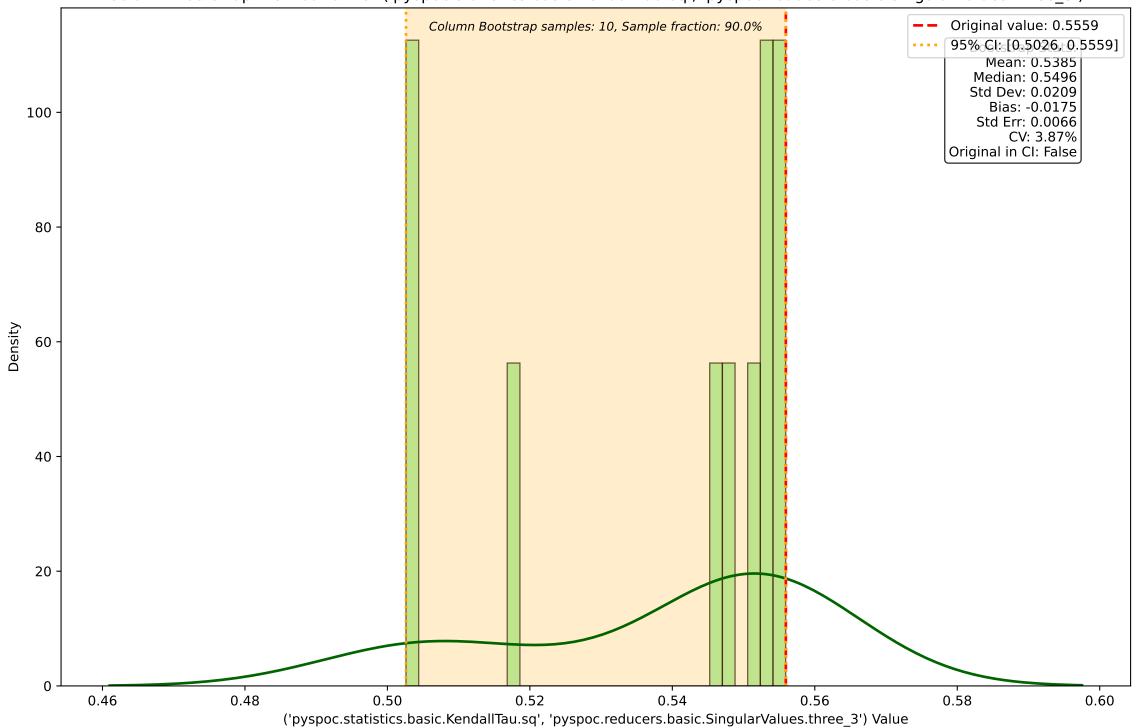
Column Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_1')



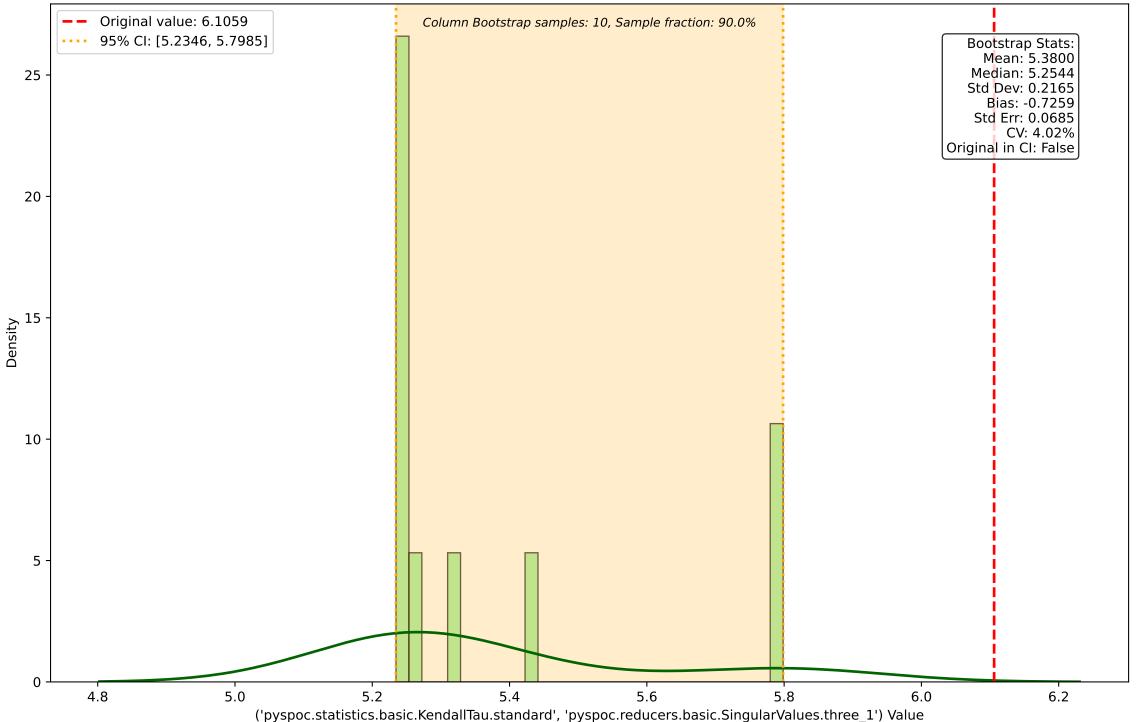
Column Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_2')



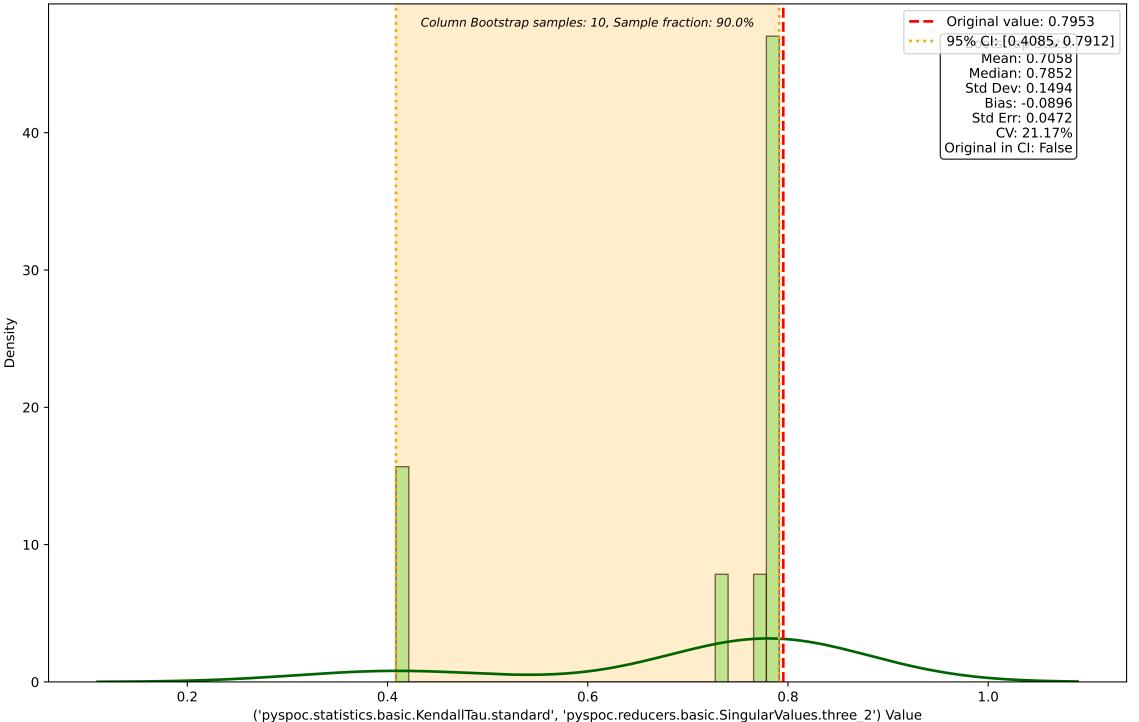
Column Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_3')



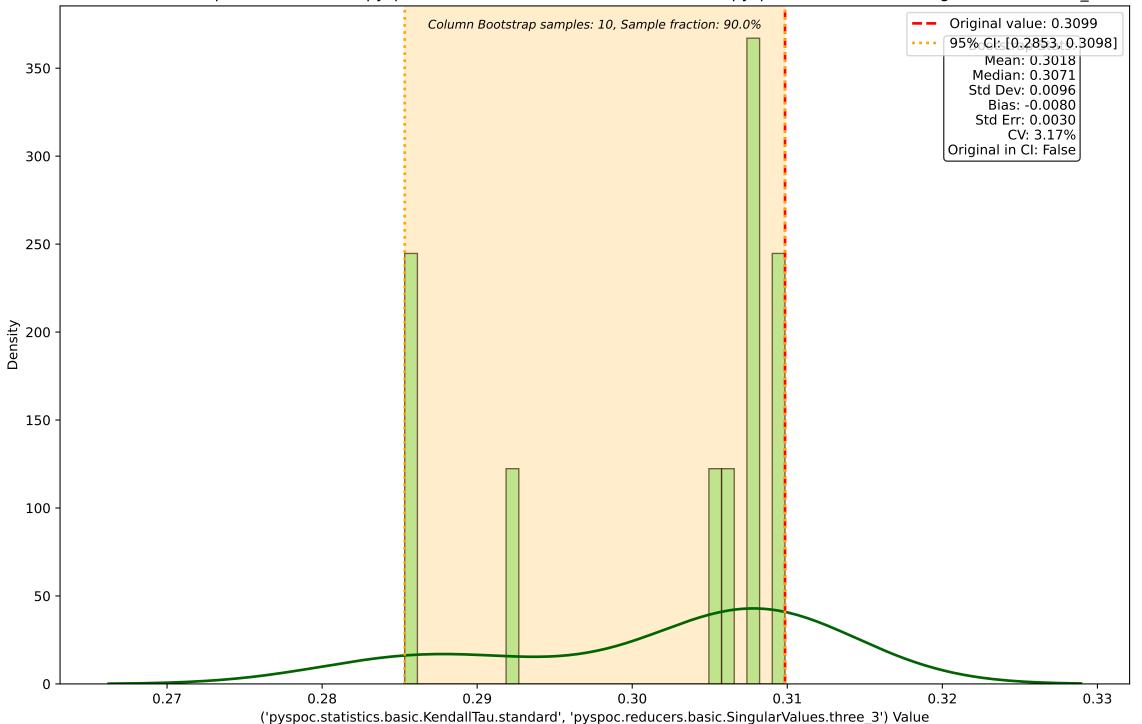
Column Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_1')



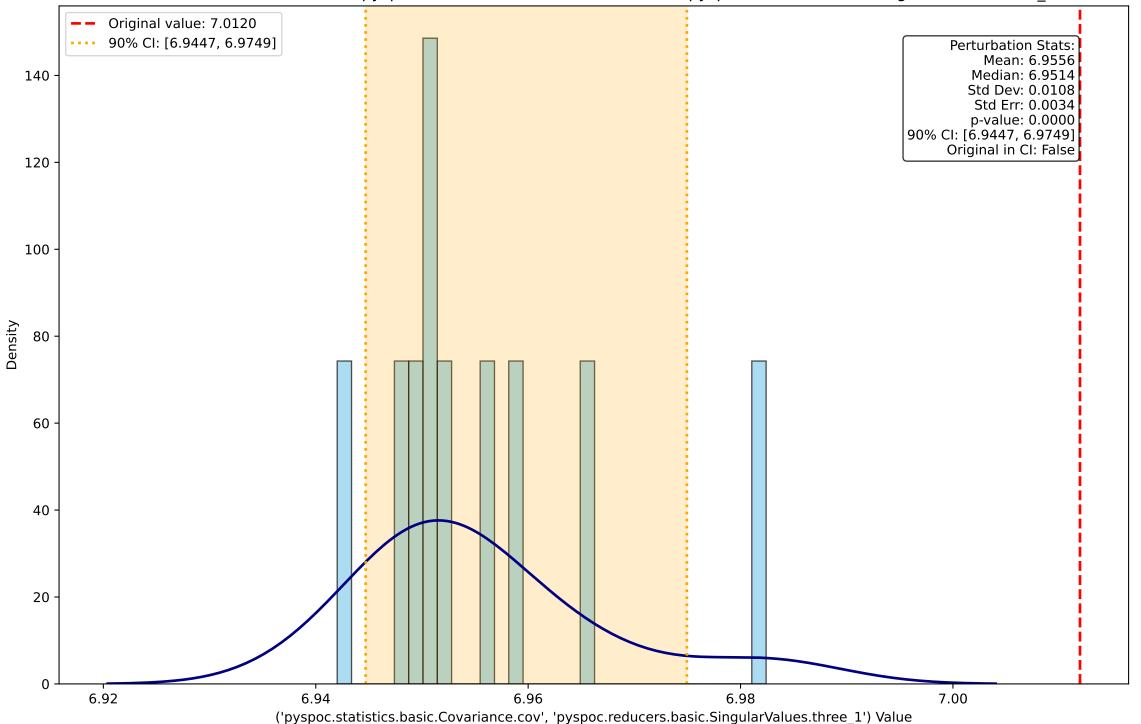
Column Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_2')



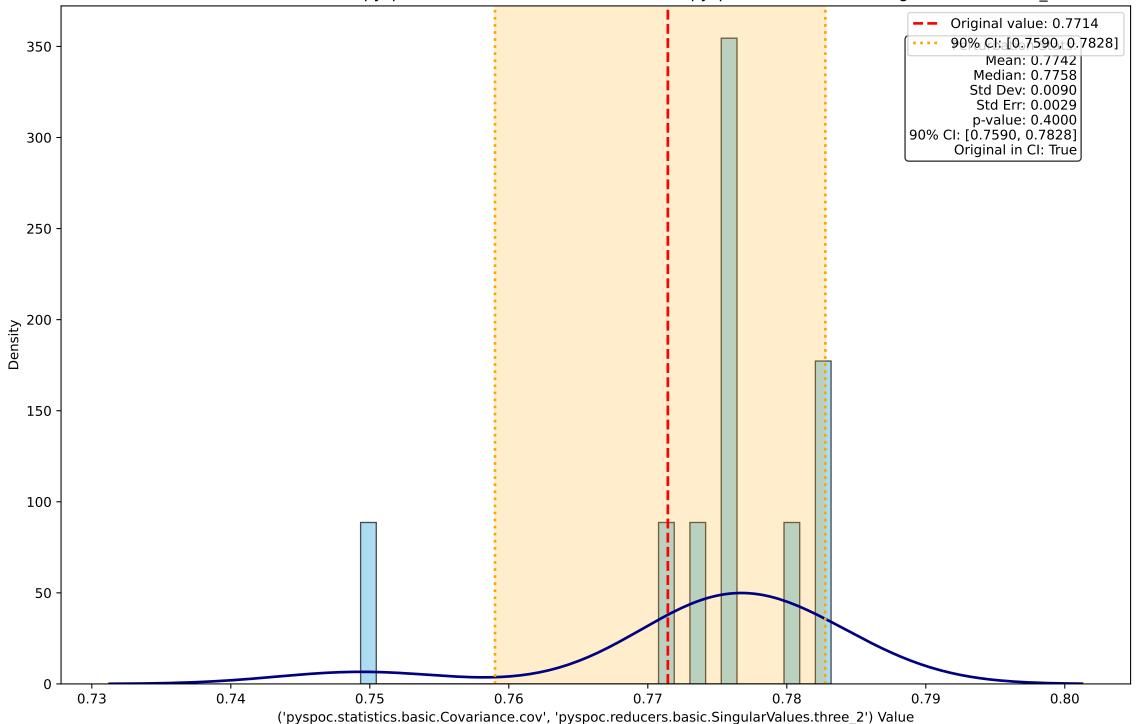
Column Bootstrap Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_3')



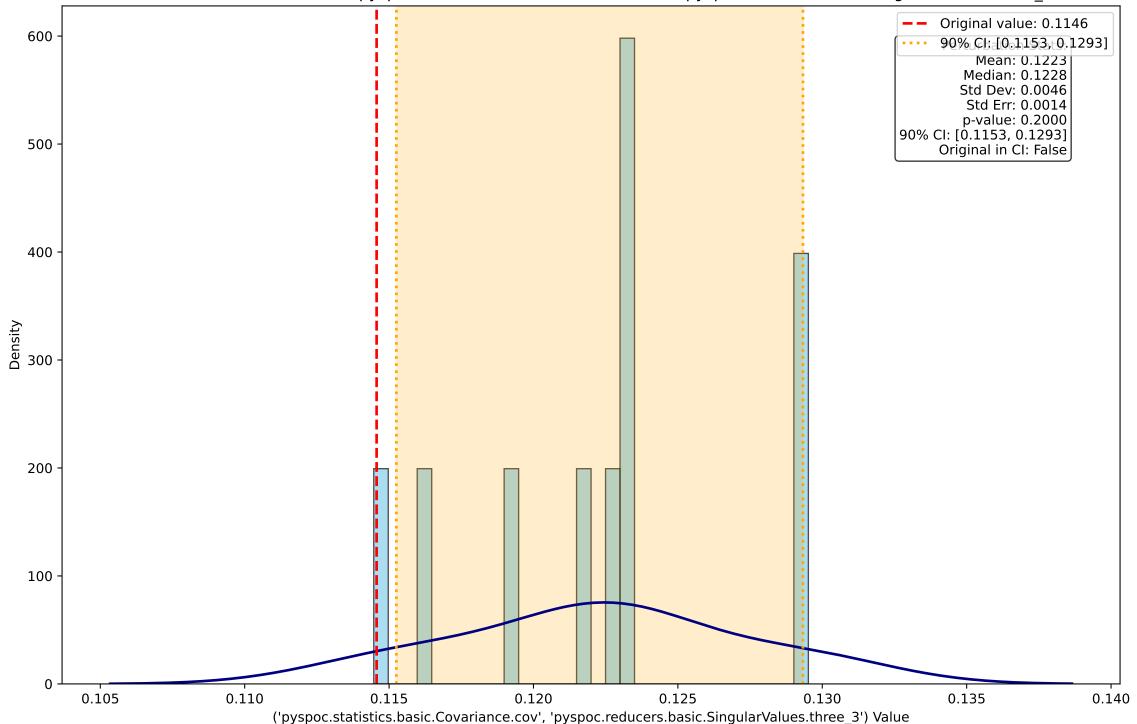
Perturbation Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_1')

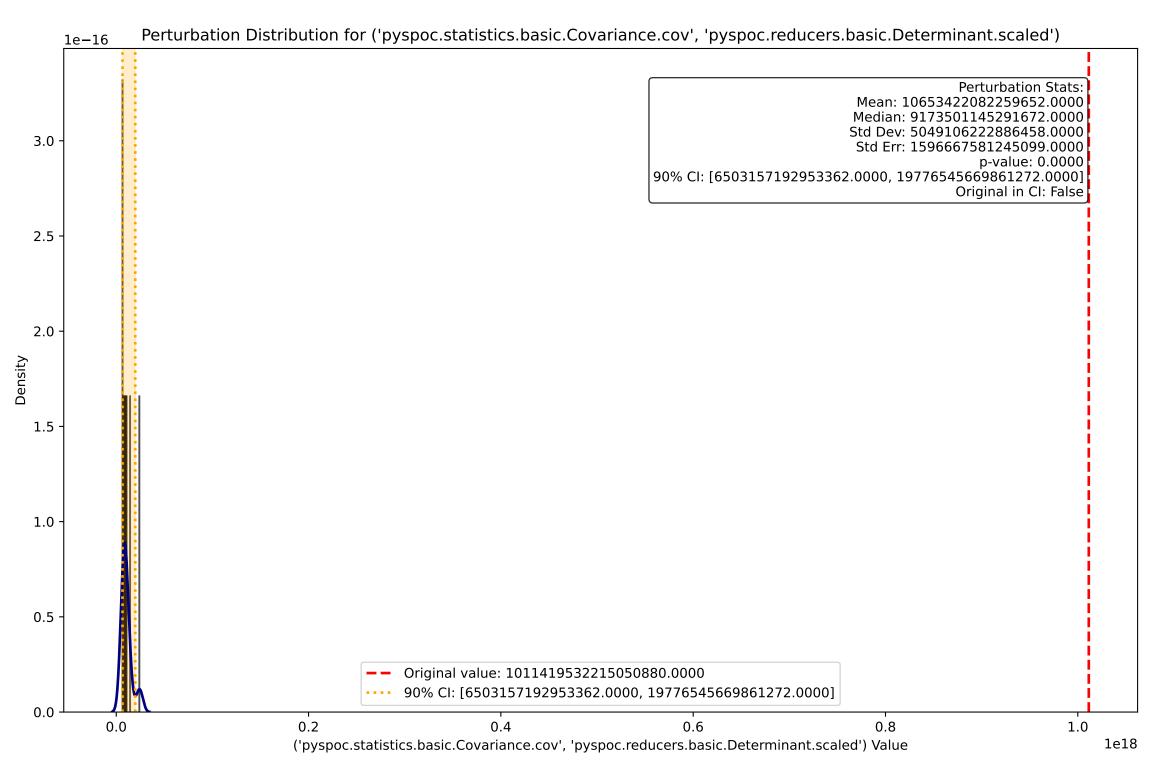


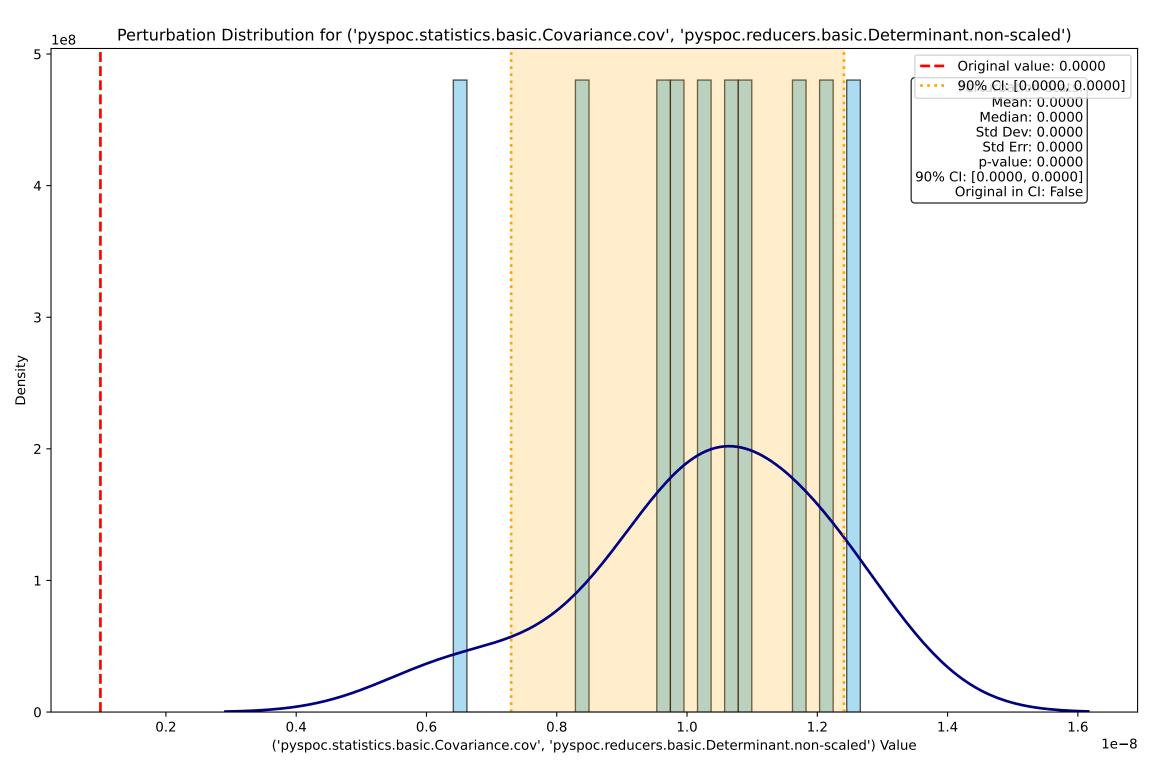
Perturbation Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_2')



Perturbation Distribution for ('pyspoc.statistics.basic.Covariance.cov', 'pyspoc.reducers.basic.SingularValues.three\_3')







Perturbation Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_1') Original value: 4.9841 90% CI: [4.5276, 4.6371] Perturbation Stats: Mean: 4.5840 Median: 4.5846 Std Dev: 0.0361 Std Err: 0.0114 p-value: 0.0000 90% CI: [4.5276, 4.6371] Original in CI: False

4.7

('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_1') Value

4.8

4.9

5.0

25 -

20

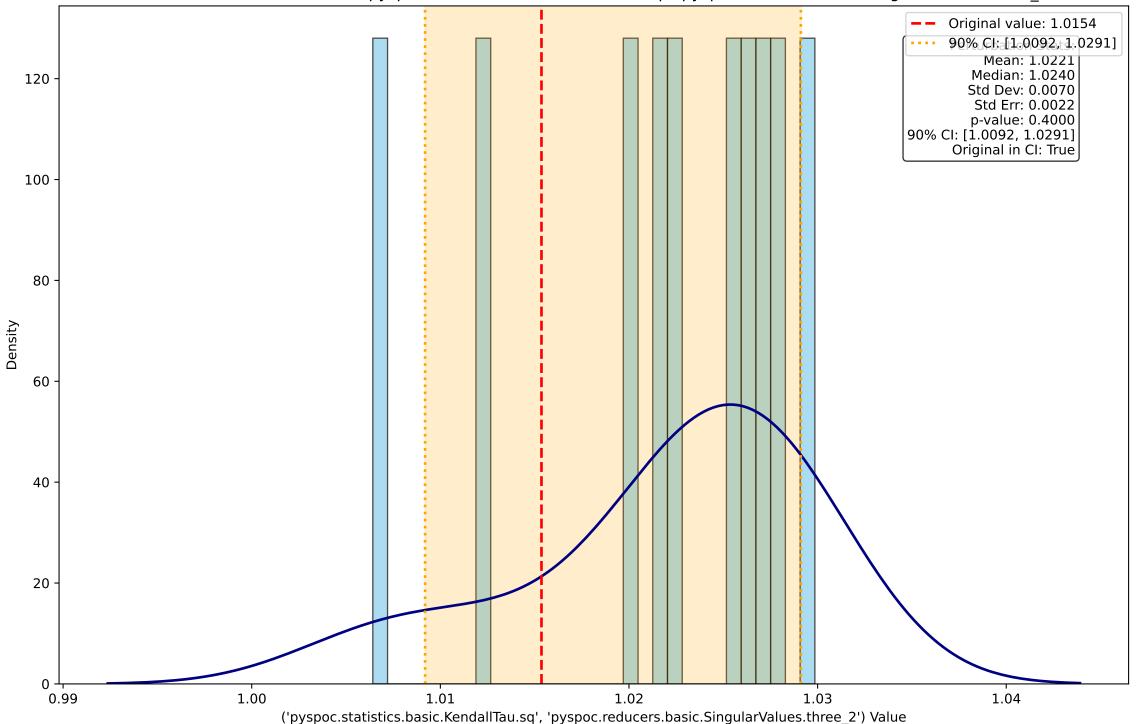
15 -

10

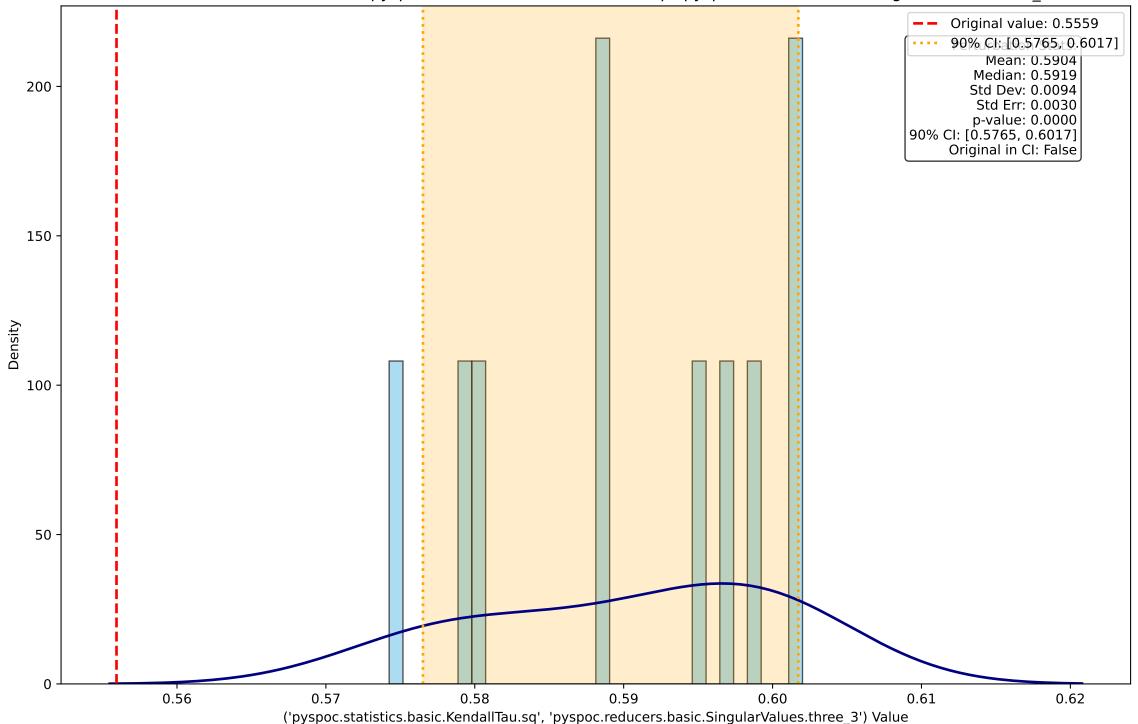
5 ·

4.5

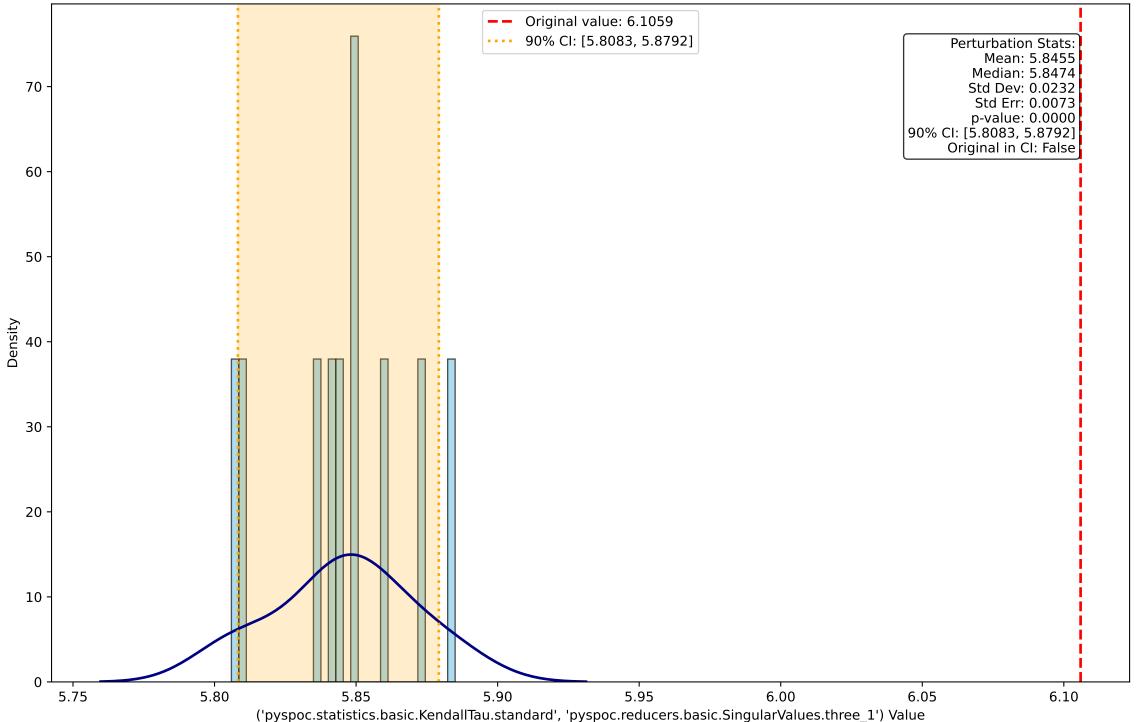
Perturbation Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_2')



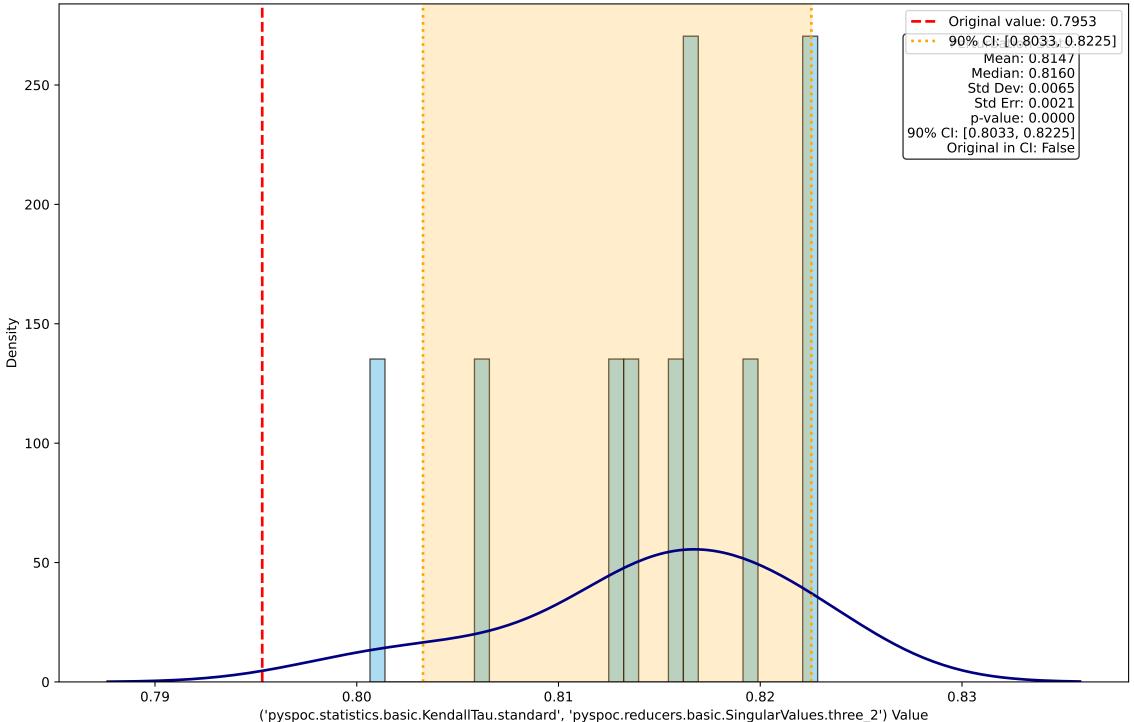
Perturbation Distribution for ('pyspoc.statistics.basic.KendallTau.sq', 'pyspoc.reducers.basic.SingularValues.three\_3')



Perturbation Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_1')



Perturbation Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_2')



Perturbation Distribution for ('pyspoc.statistics.basic.KendallTau.standard', 'pyspoc.reducers.basic.SingularValues.three\_3')

