## (A) Integration of conditions Angelidis Aztekin Bhattacherjee Canogamez Goldfarbmuren Kang Pijuan-Sala Reyfman Sathyamurthy KNN Mix 5.0 MMD Wasserstein 0.9 0.100 0.075 Var. Expl. Condition 0.050 0.025 PCA-Harmony -Param. Harmony -Rigid LEMUR -CPA --CPA --Harmony -Param. Harmony -Rigid LEMUR -LEMUR -Harmony -Param. Harmony -Rigid LEMUR -LEMUR -PCA-Harmony -Harmony -d LEMUR-LEMUR-Harmony Harmony d LEMUR-LEMUR-Harmony Harmony LEMUR LEMUR Harmony Harmony d LEMUR LEMUR Harmony Harmony Id LEMUR Harmony -Harmony -GEMUR -LEMUR -CPA -Harmony -Harmony -d LEMUR -LEMUR -Harmony Harmony Id LEMUR LEMUR Harmony -Harmony -id LEMUR -LEMUR -CPA -Harmony Harmony J LEMUR LEMUR Param. Ha Rigid I Param. H Rigid I Param. H Param. H Rigid Param. Hi Rigid I Param. H Rigid Param. H Rigid Param. Hi Rigid I Param. H Rigid (B) Biological signal retention Angelidis Aztekin Bhattacheriee Bunis Canogamez Goldfarbmuren Hrvatin Jakel Kang Pijuan-Sala Reyfman Sathyamurthy Skinnider 1.00 0.75 0.50 0.25 1.0 0.8 0.6 8.0 0.6 0.4 1.00 0.75 0.50 0.25 0.00 PCA-Harmony -Harmony -J LEMUR-LEMUR-Harmony -Harmoný -I LEMUR -LEMUR -Harmony -I LEMUR -LEMUR -PCA-Harmony Harmony LEMUR-LEMUR-CPA-Harmoný -I LEMUR -LEMUR -PCA-Harmony-Harmony-LEMUR-LEMUR-Harmony -Harmony -I LEMUR -LEMUR -Harmony -PCA-Harmony -Harmony -LEMUR-LEMUR-PCA-Harmony -Harmony -A LEMUR-LEMUR-CPA-Harmony Harmony Param. Hz Rigid I Param. He Rigid I Param. He Rigid I Param. He Rigid I Param. He Rigid I Param. Ha Rigid I Param. Hi Rigid I ram. H Rigid I (C) Ration of variance explained condition cell type Canogamez Goldfarbmuren Pijuan-Sala Angelidis Aztekin Bhattacherjee Hrvatin Jakel Kang Reyfman Sathyamurthy Skinnider 0.2 0.1 PCA Harmony Rigid LEMUR CPAUR PCA Harmony Param. Harmony Rigid LEMUR CEMUR COPA PCA-Harmony -Param. Harmony -Rigid LEMUR -CPA -PCA Harmony Param. Harmony Rigid LEMUR LEMUR PCA Harmony Rigid LEMUR CPA PCA Harmony Param. Harmony Rigid LEMUR CEMUR COPA Harmony --Param. Harmony --Rigid LEMUR --LEMUR --CPA --Harmony Param. Harmony Rigid LEMUR CEMUR PCA Harmony Rigid LEMUR CPA Harmony Param. Harmony Rigid LEMUR LEMUR PCA-Harmony – Rigid LEMUR – LEMUR – CPA – PCA -Harmony -Harmony -d LEMUR -LEMUR -CPA -PCA