

Wilcoxon Signed Ranks test.

KEEL non-parametric statistical module

May 9, 2011

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
LR (1)	-	407.0	0.0	351.0	602.0	501.0	509.5	61.5	582.5	728.0	323.0	437.0	405.0	94.0	560.0	28.0	376.0	760.0	0.0	3.0	403.0	680.0	253.0	144.0	630.0	111.0	625.0	0.0	407.0	
Ameslan (2)	313.0	-	50.0	315.5	629.0	728.0	504.5	802.0	2.0	657.0	786.5	0.0	260.5	489.0	62.0	326.0	366.0	181.5	820.0	5.0	105.5	192.0	587.0	202.0	182.0	699.0	17.0	467.0	14.0	720.5
Bayesian (3)	780.0	770.0	-	765.0	798.0	770.0	780.0	369.0	805.0	809.0	661.0	712.0	741.0	642.0	761.0	116.0	693.0	780.0	0.0	759.0	699.0	788.0	699.0	767.0	695.0	624.0	765.0	366.0	779.0	
CACC (4)	469.0	504.5	55.0	606.0	517.5	490.0	528.5	91.0	622.5	618.0	332.0	399.5	457.0	263.0	440.0	42.0	380.0	818.5	0.0	352.5	336.0	535.0	341.0	313.0	467.5	233.0	565.0	0.0	513.5	
CADD (5)	218.0	191.0	27.0	214.0	227.0	229.0	227.0	18.0	281.0	399.0	129.0	174.0	278.0	17.0	238.0	36.0	154.0	724.0	0.0	131.0	149.0	346.5	114.0	130.0	400.5	35.0	277.5	12.0	209.5	
CH2 (6)	229.0	315.5	40.0	331.0	328.5	402.5	402.5	15.0	431.0	547.0	90.0	197.0	451.0	69.0	330.0	3.0	132.0	751.0	0.0	120.0	176.0	522.0	241.0	119.0	600.0	65.0	413.0	37.0	388.5	
CHMProc (8)	270.5	18.0	31.0	201.5	538.0	436.5	-	0.0	545.5	728.0	0.0	32.5	451.0	36.0	283.0	3.0	5.0	820.0	0.0	69.0	108.0	558.5	157.0	119.0	591.0	0.0	403.5	0.0	388.5	
CharacterAnalysis (9)	758.5	778.0	451.0	689.0	802.0	780.0	806.0	780.0	816.0	726.0	751.0	726.0	756.0	729.0	795.0	292.0	765.0	820.0	197.0	703.0	776.0	770.0	709.0	742.0	816.0	644.0	798.0	416.0	780.0	
DIBD (10)	197.5	143.0	15.0	197.5	539.0	214.0	389.0	234.5	0.0	607.0	0.0	0.0	405.5	29.0	201.0	7.0	0.0	814.0	0.0	35.0	83.0	504.5	131.0	51.0	418.0	0.0	282.5	0.0	207.0	
Distance (11)	92.0	33.5	11.0	162.0	421.0	48.0	233.0	52.0	4.0	173.0	-	0.0	0.0	250.5	0.0	3.0	0.0	773.0	0.0	39.0	3.0	181.5	12.5	0.0	330.0	0.0	142.0	0.0	46.0	
EqualFrequency (12)	447.0	820.0	139.0	488.0	691.0	820.0	721.0	820.0	34.0	820.0	820.0	641.0	257.0	699.0	196.0	820.0	820.0	820.0	37.0	293.0	631.0	820.0	994.0	42.0	818.5	195.0	439.0	133.0	820.0	
Equalize (13)	404.0	603.5	127.0	440.0	606.0	734.0	668.0	815.0	55.0	789.0	820.0	0.0	752.0	597.0	139.0	623.0	99.0	-	820.0	11.0	297.0	511.0	816.0	301.0	350.0	766.0	135.0	695.0	100.0	605.5
ExemplarCh2 (14)	325.0	331.0	79.0	363.0	542.0	361.0	347.0	369.0	60.0	414.5	569.5	179.0	253.0	159.0	287.0	20.0	223.0	688.0	0.0	233.0	229.0	439.0	37.0	225.0	533.0	142.0	415.0	74.0	353.0	
FFD (15)	726.0	178.0	178.0	557.0	803.0	778.0	750.5	784.0	84.0	791.0	820.0	583.0	748.0	661.0	-	819.0	117.0	641.0	820.0	1.5	426.0	815.5	820.0	606.0	527.0	820.0	317.0	809.0	155.0	759.0
FUSINTER (16)	270.0	494.0	59.0	380.0	582.0	523.0	499.5	557.0	25.0	619.0	817.0	121.0	248.0	533.0	1.0	-	32.0	197.0	820.0	0.0	104.5	86.5	687.0	148.0	117.5	707.0	0.0	632.0	1.0	507.0
HDD (17)	792.0	747.0	704.0	738.0	784.0	809.5	811.0	780.0	528.0	813.0	780.0	664.0	749.0	800.0	663.0	788.0	-	684.0	820.0	533.5	757.0	707.5	805.0	756.0	772.0	797.0	639.0	782.5	677.0	759.5
HellingerBD (18)	404.0	603.5	127.0	440.0	606.0	734.0	668.0	815.0	55.0	789.0	820.0	0.0	752.0	597.0	139.0	623.0	99.0	-	820.0	11.0	297.0	511.0	816.0	301.0	350.0	766.0	135.0	695.0	100.0	605.5
IDS (19)	820.0	814.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0
ID3 (21)	780.0	714.5	21.0	467.5	689.0	748.0	700.0	751.0	117.0	745.0	781.0	527.0	654.0	394.0	715.5	63.0	583.0	813.5	0.0	820.0	780.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0	820.0
Kilobps (22)	370.0	628.0	121.0	444.0	671.0	664.0	644.0	712.0	44.0	747.0	817.0	189.0	387.0	591.0	4.5	693.5	72.5	399.0	820.0	0.0	229.0	-	817.0	322.0	308.0	790.0	0.0	760.0	59.0	635.0
MIDIp (23)	140.0	193.0	32.0	215.0	433.5	216.0	298.0	221.5	10.0	315.5	601.5	0.0	5.0	381.0	0.0	133.0	15.0	4.0	775.0	0.0	69.0	3.0	-	52.0	19.0	408.0	0.0	222.0	0.0	209.5
ModifiedCh2 (24)	567.0	618.0	151.0	479.0	706.0	649.0	759.0	663.0	111.0	689.0	807.5	416.0	568.0	783.0	214.0	632.0	64.0	519.0	803.5	0.0	338.0	498.0	708.0	744.0	744.0	236.0	680.0	116.5	605.0	
MODEL (25)	676.0	638.0	53.0	597.0	690.0	678.5	701.0	661.0	78.0	769.0	820.0	378.0	545.0	595.0	293.0	602.5	38.0	470.0	820.0	0.0	392.0	512.0	801.0	423.0	-	758.0	283.0	691.5	1.0	605.5
PKDD (26)	769.0	803.0	196.0	485.0	788.0	820.0	764.0	820.0	176.0	820.0	820.0	625.0	818.5	478.0	603.0	141.0	645.0	820.0	3.0	474.0	780.0	820.0	820.0	584.0	537.0	820.0	0.0	576.0	164.0	833.0
UCPD (28)	195.0	353.0	55.0	255.0	542.5	388.0	407.0	416.5	22.0	537.5	678.0	31.0	175.0	405.0	11.0	188.0	37.5	125.0	820.0	1.0	88.0	60.0	558.0	140.0	128.5	653.0	4.0	-	8.0	372.0
USD (29)	820.0	766.0	454.0	780.0	808.0	777.0	783.0	780.0	364.0	820.0	820.0	687.0	753.0	746.0	665.0	819.0	143.0	710.0	820.0	0.0	820.0	761.0	780.0	703.5	819.0	820.0	656.0	812.0	-	766.0
Zeta (30)	283.0	76.5	41.0	306.5	610.5	499.5	483.5	734.5	0.0	573.0	734.0	0.0	190.0	497.0	61.0	313.0	25.5	124.5	820.0	5.0	95.0	185.0	570.5	185.0	154.5	613.0	17.0	448.0	14.0	-

Table 1: Ranks computed by the Wilcoxon test

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	
IR (1)	-																														
Anova (2)		-																													
Bayesian (3)			-																												
CACC (4)				-																											
CADD (5)					-																										
CAM (6)						-																									
Chi2 (7)							-																								
ChiMerge (8)								-																							
ClusterAnalysis (9)									-																						
DIBL (10)										-																					
Distance (11)											-																				
EqualFrequency (12)												-																			
EqualWidth (13)													-																		
Extended Chi2 (14)														-																	
FFD (15)															-																
FUSINTER (16)																-															
HDD (17)																	-														
HellingerBD (18)																		-													
Heter-Disc (19)																			-												
ID3 (20)																				-											
IDD (21)																					-										
Khops (22)																						-									
MDLP (23)																							-								
Modified Chi2 (24)																								-							
MODL (25)																									-						
MVD (26)																										-					
PKID (27)																											-				
UCPD (28)																												-			
USD (29)																													-		
Zeta (30)																														-	

Table 2: Summary of the Wilcoxon test. ●= the method in the row improves the method of the column. ○= the method in the column improves the method of the row. Upper diagonal of level significance $\alpha = 0.9$, Lower diagonal level of significance $\alpha = 0.95$

Method	$\alpha = 0.9$		$\alpha = 0.95$	
	+	\pm	+	\pm
1R	10	19	8	19
Ameva	9	16	8	16
Bayesian	25	27	25	27
CACC	7	22	7	22
CADD	1	5	1	8
CAIM	6	15	6	15
Chi2	3	14	3	14
ChiMerge	6	12	6	14
ClusterAnalysis	25	28	25	28
DIBD	3	7	2	8
Distance	1	3	1	3
EqualFrequency	17	22	17	22
EqualWidth	11	17	11	18
Extended Chi2	3	15	2	15
FFD	21	24	21	24
FUSINTER	8	14	7	15
HDD	27	29	27	29
HellingerBD	14	20	14	20
Heter-Disc	0	0	0	0
ID3	28	29	28	29
IDD	18	24	18	24
Khiops	14	20	14	20
MDLP	2	7	2	7
Modified Chi2	16	22	16	22
MODL	16	23	15	24
MVD	1	6	1	6
PKID	22	24	21	24
UCPD	6	12	4	12
USD	25	27	25	27
Zeta	6	16	6	17

Table 3: Wilcoxon test summary results