

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)																															
Ameva (2)	695.0	-	447.5	138.0	708.5	64.0	126.0	62.0	419.0	156.0	99.0	189.0	258.5	223.0	315.0	92.0	270.0	183.0	472.5	430.0	493.5	133.5	93.0	181.0	148.5	363.0	382.0	31.0	387.0	108.0	
Bayesian (3)	372.5	63.0	-	416.0	806.0	308.5	452.5	337.5	697.0	586.0	376.5	529.0	619.0	623.0	653.0	346.0	603.0	564.0	773.0	722.5	750.0	484.0	372.5	490.0	513.5	702.0	705.5	504.0	641.0	481.0	
CACC (4)	682.0	404.0	705.0	-	784.0	262.5	449.5	357.5	696.0	592.0	336.0	478.0	572.0	541.0	613.0	323.0	551.5	527.5	768.5	677.5	717.0	478.0	314.0	458.0	454.0	645.5	616.0	522.0	593.0	414.5	
CAAD (5)	85.5	14.0	142.5	36.0	817.5	3.0	17.5	65.0	1133.5	39.0	20.0	12.5	5.0	62.5	90.0	6.0	99.0	1.0	313.0	222.5	102.0	4.0	10.0	19.5	119.5	119.5	78.0	5.0	397.0	3.0	
Ch2 (6)	655.0	367.5	707.0	371.0	807.5	327.5	382.5	451.0	657.0	561.0	374.5	512.5	636.5	539.5	692.5	303.5	550.0	514.0	732.0	678.5	742.0	398.5	308.5	468.0	431.0	627.5	673.0	492.0	628.0	398.5	
ChMarsoc (8)	758.0	445.5	789.0	462.5	816.0	325.5	528.5	-	770.0	646.0	406.0	629.0	688.0	644.0	711.0	415.5	667.5	622.0	787.0	765.5	793.0	522.0	360.0	595.5	533.5	732.0	724.0	566.0	711.0	590.5	
CharacterAnalysis (9)	364.0	83.0	414.5	124.0	706.5	43.0	87.0	-	204.0	92.0	61.0	112.0	107.5	211.0	45.0	222.5	81.5	552.5	415.0	436.5	415.0	87.0	63.5	69.0	57.0	383.5	265.0	66.0	282.0	63.0	
DiBD (10)	624.0	234.0	607.5	228.0	764.0	142.0	236.0	174.0	576.0	-	141.5	379.5	452.0	389.0	525.0	139.5	453.0	347.0	719.5	603.0	646.0	257.0	103.0	327.0	305.0	526.0	538.0	249.0	525.0	244.0	
Distance (11)	721.0	406.5	725.0	447.0	890.0	354.5	445.5	377.0	728.0	678.5	-	542.0	698.0	545.0	660.0	397.0	591.0	583.5	765.0	713.5	729.0	565.0	294.0	461.0	499.0	634.0	658.0	553.0	600.0	459.0	
EqualFrequency (12)	591.0	251.0	703.5	302.0	772.5	149.0	307.5	157.0	759.0	446.5	228.0	528.0	434.0	672.5	327.0	434.0	522.0	417.5	696.0	736.5	626.0	283.0	214.5	396.0	317.5	546.5	711.5	329.0	602.0	238.5	
Equalize (13)	637.0	216.0	693.0	292.5	819.0	145.0	246.0	158.0	698.5	473.0	226.5	492.5	519.0	466.0	634.0	196.0	497.0	582.0	798.0	665.0	710.0	318.0	223.5	593.0	382.5	624.0	624.0	374.0	572.0	273.5	
Exemplar Ch2 (14)	560.0	197.0	669.0	279.0	722.5	141.5	290.5	176.0	662.5	431.0	275.0	339.0	473.5	346.5	498.5	212.0	467.5	354.0	644.0	697.0	638.0	323.0	243.0	357.0	331.0	532.0	572.0	297.5	561.0	241.0	
FFD (15)	448.0	127.0	550.5	167.0	737.0	62.5	127.5	69.0	609.0	255.0	120.0	147.5	270.5	321.5	498.5	62.0	371.5	149.0	628.0	622.5	514.5	113.0	123.5	166.0	149.0	477.0	445.5	107.0	397.5	33.0	
FUSINTER (16)	728.0	434.0	762.0	457.0	814.0	308.0	516.5	404.5	775.0	660.5	473.0	609.0	700.0	568.0	718.0	-	612.0	624.0	799.0	735.0	775.0	692.5	388.0	563.0	561.0	692.0	725.0	644.0	670.0	453.0	
HDD (17)	513.0	180.0	576.5	267.0	819.0	145.0	269.0	152.5	562.5	367.0	229.0	288.0	354.0	315.5	448.5	168.0	-	283.0	622.5	642.5	548.5	245.0	180.5	283.5	281.0	494.0	442.5	271.0	426.5	221.5	
HellingerBD (18)	637.0	216.0	693.0	292.5	819.0	145.0	266.0	158.0	698.5	473.0	226.5	492.5	519.0	466.0	634.0	196.0	497.0	582.0	798.0	665.0	710.0	318.0	223.5	593.0	382.5	624.0	624.0	374.0	572.0	273.5	
Heuristic (19)	371.0	97.5	359.5	143.5	597.5	35.5	106.5	57.5	372.0	217.0	106.5	128.0	176.0	176.0	250.5	43.0	177.5	118.0	510.0	277.0	348.0	262.5	85.0	34.0	80.0	313.5	153.5	98.0	208.0	48.5	
ID3 (21)	326.5	70.0	412.0	103.0	718.0	25.0	77.5	-	348.5	134.0	51.0	127.0	156.0	182.0	270.5	45.0	296.5	110.0	475.0	430.0	486.0	99.5	40.0	108.5	71.5	315.5	308.0	93.0	362.5	30.0	
Kilobps (22)	676.5	296.0	643.0	302.0	776.0	230.0	347.5	258.0	693.0	563.0	215.0	500.0	587.5	457.0	670.0	217.5	540.0	492.0	730.0	707.0	720.5	-	177.0	430.0	364.5	590.5	712.0	414.0	614.0	293.0	
MIDI (23)	727.0	447.5	706.0	469.0	770.0	389.5	513.5	423.0	716.5	677.0	526.0	605.5	632.0	577.0	696.5	392.0	639.5	596.5	782.0	734.5	780.0	633.0	-	522.0	585.0	661.0	666.0	592.0	639.0	498.5	
Modified Ch2 (24)	602.0	290.0	680.5	320.0	765.5	198.0	319.0	226.5	714.0	493.0	319.0	424.0	513.5	426.0	619.0	257.0	536.5	413.0	712.0	725.5	676.5	258.0	235.0	-	398.0	605.0	669.5	397.0	606.5	290.0	
MODEL (25)	671.5	306.5	745.5	329.0	791.5	194.5	339.0	231.5	723.0	515.0	321.0	502.5	559.5	432.0	634.0	222.0	539.0	457.5	699.0	731.0	783.5	453.5	235.0	222.0	653.5	630.0	640.0	311.0	630.0	315.5	
PKDD (26)	436.0	114.5	641.5	164.0	709.0	43.0	110.0	56.0	555.0	282.0	122.0	108.5	255.5	248.0	374.5	55.0	346.5	150.0	640.5	639.5	479.0	108.0	114.0	140.5	143.0	443.0	377.0	344.0	466.0	178.0	
PKDD (27)	436.0	114.5	641.5	164.0	709.0	43.0	110.0	56.0	555.0	282.0	122.0	108.5	255.5	248.0	374.5	55.0	346.5	150.0	640.5	639.5	479.0	108.0	114.0	140.5	143.0	443.0	377.0	344.0	466.0	178.0	
UCPD (28)	689.0	316.0	722.0	298.0	815.0	238.0	328.0	254.0	754.0	571.0	267.0	491.0	624.0	522.5	713.0	176.0	549.0	446.0	796.0	722.0	727.0	406.0	228.0	423.0	409.0	608.0	675.0	-	636.0	321.0	
USD (29)	433.0	139.0	577.0	187.0	690.0	64.0	194.0	69.0	538.0	295.0	180.0	181.0	279.0	299.0	417.5	110.0	362.5	208.0	583.0	639.0	457.5	169.0	141.0	213.5	133.0	426.0	401.0	184.0	-	111.5	
Zeta (30)	712.0	302.0	788.0	405.5	817.0	186.0	428.5	260.0	757.0	576.0	361.0	565.5	642.0	579.0	687.0	327.0	598.5	596.5	773.0	751.5	790.0	487.0	321.5	490.0	504.5	673.0	702.0	499.0	708.5	-	

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	1	12	1	13
Ameva	17	29	16	29
Bayesian	1	11	1	11
CACC	14	29	13	29
CADD	0	2	0	2
CAIM	23	29	21	29
Chi2	14	28	13	29
ChiMerge	20	29	18	29
ClusterAnalysis	1	10	1	11
DIBD	9	18	7	18
Distance	19	29	16	29
EqualFrequency	10	22	10	23
EqualWidth	7	18	6	18
Extended Chi2	7	21	6	23
FFD	3	13	2	14
FUSINTER	20	29	19	29
HDD	2	21	1	22
HellingerBD	11	22	11	24
Heter-Disc	0	7	0	8
ID3	0	10	0	10
IDD	1	11	1	11
Khiops	13	24	13	25
MDLP	20	29	19	29
Modified Chi2	10	26	9	28
MODL	11	27	11	28
MVD	1	14	1	16
PKID	2	13	2	14
UCPD	14	24	13	25
USD	3	15	3	15
Zeta	16	28	16	29

Table 3: Wilcoxon test summary results