

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)	574.5	-	421.0	361.0	772.0	203.0	228.0	201.0	266.0	450.0	383.0	155.0	215.0	383.0	93.0	182.0	300.0	234.0	633.0	348.0	303.0	96.0	314.0	120.0	185.0	402.0	16.0	428.0	299.0	333.0	
Amesex (2)	359.0	179.0	-	672.5	801.0	342.5	428.0	336.0	473.0	705.0	567.0	317.0	391.0	568.0	216.5	328.0	455.0	439.0	819.0	520.0	545.0	251.5	471.0	394.5	321.0	644.0	146.0	566.0	487.0	644.0	
Bayesian (3)	459.0	147.5	574.0	-	216.0	176.0	180.0	170.0	301.0	392.0	328.0	113.0	138.0	317.0	69.5	126.0	173.0	170.0	664.0	195.0	269.0	105.0	264.0	51.0	63.0	481.0	47.0	270.0	309.0	350.0	
CACC (4)	48.0	39.0	56.0	57.0	68.0	15.0	36.0	32.0	33.0	68.0	50.0	30.0	17.0	98.5	0.0	25.0	0.0	410.0	32.0	29.5	0.0	49.5	0.0	3.0	136.5	0.0	27.0	23.0	19.0		
CAOD (5)	54.0	34.0	36.0	35.0	38.5	15.0	32.0	29.0	30.0	34.0	32.0	15.0	10.0	28.0	0.0	10.0	0.0	430.0	32.0	29.5	0.0	49.5	0.0	3.0	136.5	0.0	27.0	23.0	19.0		
Ch2 (6)	504.0	394.0	631.0	531.0	790.0	327.0	483.0	338.0	530.0	658.0	547.0	314.0	370.0	635.0	246.0	394.0	510.0	432.0	791.0	504.0	566.0	335.0	598.0	275.0	416.5	697.0	153.0	578.0	486.0	697.0	
ChMarec (8)	610.0	444.0	650.0	581.0	808.0	426.5	482.0	-	521.0	723.0	665.0	413.0	495.0	664.5	312.0	387.0	490.0	483.0	810.0	555.0	581.0	331.0	599.0	312.0	379.0	695.0	254.0	586.5	492.0	698.0	
CharacterAnalysis (9)	361.0	115.0	388.0	305.0	712.0	129.0	162.0	97.0	174.0	-	299.0	207.0	242.0	491.0	98.0	322.0	438.0	361.5	761.0	486.0	445.0	206.0	418.0	209.0	315.0	644.0	81.0	510.0	482.0	474.0	
DiBB (10)	431.0	213.0	492.0	420.0	730.0	170.0	233.0	115.0	294.0	481.0	-	143.0	211.0	413.0	102.0	154.0	344.0	198.5	747.0	373.0	349.0	100.0	216.5	114.5	186.0	474.0	59.0	357.0	336.0	322.0	
Distance (11)	605.0	393.0	467.0	630.0	770.0	467.0	516.0	407.0	573.0	720.0	637.0	720.0	500.5	657.0	355.5	478.0	565.0	540.0	774.0	574.0	627.0	222.0	570.5	534.0	527.0	670.0	273.0	690.0	598.0	645.5	
EqualFrequency (12)	437.0	222.0	508.0	430.0	721.5	199.0	185.0	215.5	339.0	489.0	407.0	163.0	253.0	367.0	142.0	230.0	323.0	239.0	670.0	397.0	382.0	211.0	311.0	398.0	192.0	593.0	106.0	400.5	303.0	361.0	
Exponential Ch2 (14)	727.0	603.5	750.5	698.0	820.0	512.0	574.0	508.0	682.0	806.0	718.0	464.5	565.5	678.0	-	524.5	640.0	624.5	820.0	655.0	722.0	429.0	638.0	558.5	593.0	759.0	228.0	786.0	637.0	658.0	
FUSINTER (16)	638.0	452.0	691.0	608.5	820.0	407.0	426.5	393.0	498.0	716.0	666.0	302.0	415.0	530.0	255.5	-	533.0	449.0	806.0	616.0	589.0	295.5	560.5	393.5	386.5	687.0	159.5	639.0	527.5	601.0	
HDD (17)	511.0	325.0	647.0	461.0	795.0	287.0	310.0	250.0	382.0	588.0	476.0	215.0	250.5	457.0	140.0	247.0	-	303.0	747.0	476.0	456.0	223.5	379.0	182.5	216.0	611.0	199.0	465.0	326.5	457.0	
HellingerBD (18)	596.0	381.0	659.0	541.0	820.0	395.0	488.0	337.0	418.5	711.0	621.5	240.0	331.0	521.0	195.5	371.0	477.0	-	798.0	511.5	549.0	252.0	510.0	265.0	349.0	647.0	103.5	587.0	439.0	574.0	
Heuristic (19)	472.0	301.0	629.0	474.0	788.0	270.5	275.5	285.0	294.0	513.0	407.0	149.0	213.0	423.0	128.0	241.0	34.0	308.5	741.0	730.0	350.0	197.0	339.0	124.0	217.0	580.0	83.0	490.0	206.0	418.0	
ID3 (20)	480.0	276.0	511.0	415.0	790.5	250.0	254.0	239.0	335.0	557.0	471.0	173.0	225.0	438.0	98.0	231.0	344.0	278.0	678.0	410.0	410.0	152.0	375.0	163.0	235.0	529.0	41.0	391.0	348.0	383.0	
Kilobps (22)	724.0	568.5	675.0	671.0	820.0	525.0	508.0	489.0	614.0	788.0	720.0	388.0	507.5	609.0	351.0	524.5	556.5	528.0	820.0	580.0	668.0	-	624.0	450.0	475.0	755.0	264.0	691.0	579.0	615.0	
MIDI (23)	691.0	515.5	769.0	724.5	820.0	462.0	505.0	508.0	611.0	775.0	705.5	367.0	495.5	722.0	261.5	476.5	637.5	555.0	811.0	696.0	657.0	370.0	602.5	-	217.5	270.0	540.0	115.0	440.0	428.0	402.0
Modified Ch2 (24)	632.0	459.0	757.0	692.0	817.0	377.5	404.0	401.0	505.0	746.0	634.0	293.0	411.0	588.0	227.0	423.5	564.0	471.0	811.0	699.0	585.0	345.0	510.0	295.5	510.0	699.0	184.0	384.0	572.0	531.0	
MODL (25)	664.0	474.0	666.0	566.0	766.0	466.0	506.0	466.0	666.0	766.0	666.0	466.0	506.0	666.0	466.0	506.0	666.0	466.0	506.0	666.0	466.0	506.0	666.0	466.0	506.0	666.0	466.0	506.0	666.0	466.0	506.0
PKDD (26)	764.0	674.0	773.0	699.0	820.0	615.0	627.0	566.0	690.0	790.0	721.0	507.0	648.0	714.0	592.0	620.5	681.0	716.5	815.0	747.0	770.0	518.0	705.0	612.0	636.0	782.0	38.0	785.0	708.5	702.0	
UCPD (28)	474.0	254.0	550.0	441.0	798.0	233.0	242.0	233.5	310.0	658.0	463.0	130.0	216.0	419.5	34.0	181.0	355.0	233.0	812.0	400.0	429.0	89.0	380.0	125.0	236.0	556.0	35.0	-	337.0	393.0	
USD (29)	521.0	333.0	761.0	471.0	797.0	288.0	334.0	328.0	338.0	661.0	484.0	212.0	277.0	517.0	143.0	192.5	493.5	381.0	760.0	614.0	432.0	241.0	392.0	170.0	248.0	610.0	111.5	483.0	-	432.0	
Zeta (30)	487.0	256.0	511.0	470.0	761.0	111.0	323.0	122.0	346.0	547.0	458.0	174.5	243.0	459.0	162.0	219.0	363.0	246.0	797.0	402.0	437.0	165.0	378.0	183.0	289.0	522.0	78.0	427.0	348.0	-	

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	2	15	2	16
Ameva	12	26	11	26
Bayesian	2	7	2	10
CACC	3	15	3	16
CADD	0	1	0	1
CAIM	14	27	13	28
Chi2	11	27	11	27
ChiMerge	14	28	13	28
ClusterAnalysis	6	23	5	23
DIBD	2	8	2	10
Distance	2	16	2	16
EqualFrequency	18	29	18	29
EqualWidth	17	27	14	27
Extended Chi2	3	16	2	17
FFD	25	28	23	28
FUSINTER	14	27	14	28
HDD	5	21	5	22
HellingerBD	12	24	9	26
Heter-Disc	0	2	0	2
ID3	5	18	4	20
IDD	5	16	2	18
Khiops	19	28	18	29
MDLP	6	20	6	22
Modified Chi2	18	27	17	27
MODL	15	27	14	27
MVD	1	7	1	10
PKID	28	29	27	29
UCPD	5	16	4	16
USD	6	22	6	23
Zeta	5	18	3	18

Table 3: Wilcoxon test summary results