Acceptances in the $H^0 \to W^+W^-$ Analysis

P. Bussey, D. Benjamin,T. Davies, D. Hidas, M.Kruse, A.Robson, R. St. Denis, A.S.Thompson

October 5, 2006

V1.0

110gev	ee	emu	mumu	ll
WW	2.70923+-1.64597	5.27694+-2.29716	2.46196+-1.56906	10.4482+-3.23236
WZ	0.0941991+-0.306919	0.18806+-0.433659	0.110825+-0.332904	0.393084+-0.626964
ZZ	0.0874784+-0.295767	0.0374872+-0.193616	0.0909592+-0.301594	0.215925+-0.464677
ttbar	0.0529246+-0.230054	0.157955+-0.397436	0.0505796+-0.224899	0.261459+-0.511331
wgamma	5.39673+-2.32309	4.95439+-2.22585	0.0217007+-0.147312	10.3728+-3.22069
DYll	2.6868+-1.63914	4.09239+-2.02297	2.76574+-1.66305	9.54493+-3.08949
Background Total	11.0274+-3.32075	14.7072+-3.835	5.50176+-2.34558	31.2364+-5.58895
higgsww	0.0290193+-0.17035	0.058455+-0.241775	0.0278234+-0.166803	0.115298+-0.339555
data	8	20	7	35

Table 1: Events passing cuts, assuming $M_H^{\mathrm{SM}} = 110$ GeV

120GeV	ee	emu	mumu	ll
WW	3.67896+-1.91806	7.31469+-2.70457	3.38625+-1.84018	14.3799+-3.79209
WZ	0.127868+-0.357586	0.258516+-0.508445	0.150158+-0.387502	0.536542+-0.73249
ZZ	0.101405+-0.318442	0.0475568+-0.218075	0.110058+-0.33175	0.259021+-0.508941
ttbar	0.0867607+-0.294552	0.224058+-0.473348	0.064788+-0.254535	0.375607+-0.612868
wgamma	5.17171+-2.27414	4.46156+-2.11224	0.0219137+-0.148033	9.65519+-3.10728
DYll	2.21013+-1.48665	3.43164+-1.85247	2.14628+-1.46502	7.78805+-2.79071
Background Total	11.3768+-3.37296	15.738+-3.96712	5.87944+-2.42476	32.9943+-5.74407
higgsww	0.0778633+-0.27904	0.157921+-0.397392	0.0745896+-0.273111	0.310373+-0.557112
data	9	21	7	37

Table 2: Events passing cuts, assuming $M_H^{\mathrm{SM}} = 120$ GeV

130GeV	ee	emu	mumu	ll
WW	4.68991+-2.16562	9.31637+-3.05227	4.21856+-2.05391	18.2248+-4.26905
WZ	0.16406+-0.405044	0.325987+-0.570952	0.186574+-0.431942	0.676621+-0.82257
ZZ	0.115703+-0.340152	0.0575976+-0.239995	0.122581+-0.350115	0.295881+-0.54395
ttbar	0.141222+-0.375795	0.342167+-0.58495	0.125432+-0.354164	0.60882+-0.780269
wgamma	5.41662+-2.32736	4.37646+-2.092	0.0250439+-0.158253	9.81812+-3.13339
DYll	1.68313+-1.29736	2.43529+-1.56054	1.47419+-1.21416	5.59261+-2.36487
Background Total	12.2106+-3.49437	16.8539+-4.10535	6.15238+-2.4804	35.2168+-5.93438
higgsww	0.194734+-0.441286	0.401475+-0.633621	0.189765+-0.43562	0.785968+-0.886548
data	9	21	7	37

Table 3: Events passing cuts, assuming $M_H^{\mathrm{SM}} = 130$ GeV

140GeV	ee	emu	mumu	ll
WW	5.5458+-2.35495	11.014+-3.31874	4.92524+-2.21929	21.485+-4.63519
WZ	0.195305+-0.441933	0.3872+-0.622254	0.222018+-0.471188	0.804522+-0.896952
ZZ	0.127223+-0.356683	0.0647134+-0.254388	0.135224+-0.367728	0.32716+-0.571979
ttbar	0.208298+-0.456397	0.413426+-0.642982	0.153768+-0.392133	0.775491+-0.88062
wgamma	4.46784+-2.11373	3.6189+-1.90234	0.00893207+-0.0945096	8.09567+-2.84529
DYll	1.38921+-1.17865	2.06644+-1.43751	1.16585+-1.07974	4.62151+-2.14977
Background Total	11.9337+-3.45452	17.5647+-4.19103	6.61103+-2.57119	36.1094+-6.00911
higgsww	0.315705+-0.561876	0.668885+-0.817854	0.320226+-0.565886	1.30482+-1.14229
data	10	20	10	40

Table 4: Events passing cuts, assuming $M_H^{\rm SM} = 140$ GeV

150GeV	ee	emu	mumu	ll
WW	6.20355+-2.49069	12.2962+-3.50659	5.41563+-2.32715	23.9152+-4.89031
WZ	0.220993+-0.470099	0.433408+-0.658337	0.255616+-0.505585	0.910016+-0.953948
ZZ	0.139836+-0.373946	0.0696012+-0.26382	0.143847+-0.379272	0.353284+-0.594377
ttbar	0.270334+-0.519936	0.490303+-0.700217	0.214278+-0.462902	0.974915+-0.987378
wgamma	4.11295+-2.02804	3.3772+-1.83771	0.0101619+-0.100806	7.5003+-2.73867
DYll	1.13238+-1.06413	1.50326+-1.22607	0.779402+-0.882837	3.41504+-1.84798
Background Total	12.08+-3.47564	18.17+-4.26262	6.81893+-2.61131	37.0687+-6.08841
higgsww	0.413772+-0.643251	0.891545+-0.944216	0.426897+-0.653373	1.7322+-1.31613
data	11	21	12	44

Table 5: Events passing cuts, assuming $M_H^{\rm SM} = 150$ GeV

160GeV	ee	emu	mumu	ll
WW	6.63949+-2.57672	13.0661+-3.61471	5.69856+-2.38717	25.4037+-5.04021
WZ	0.243166+-0.493118	0.464897+-0.681833	0.281925+-0.530966	0.989986+-0.99498
ZZ	0.153864+-0.392255	0.0702435+-0.265035	0.152714+-0.390786	0.376822+-0.613858
ttbar	0.336984+-0.580503	0.608619+-0.780141	0.25779+-0.50773	1.20339+-1.09699
wgamma	3.65477+-1.91174	2.81525+-1.67787	0+-0	6.47002+-2.54362
DYll	0.933139+-0.965991	1.33927+-1.15727	0.62952+-0.793423	2.90192+-1.7035
Background Total	11.9614+-3.45853	18.3644+-4.28537	7.02051+-2.64962	37.3459+-6.11113
higgsww	0.532897+-0.729998	1.15211+-1.07336	0.555348+-0.745216	2.2404+-1.4968
data	11	26	10	47

Table 6: Events passing cuts, assuming $M_H^{\rm SM} = 160$ GeV

170GeV	ee	emu	mumu	ll
WW	6.80781+-2.60918	13.3448+-3.65306	5.71422+-2.39044	25.8664+-5.0859
WZ	0.266668+-0.516399	0.481931+-0.694213	0.305759+-0.552954	1.05436+-1.02682
ZZ	0.176579+-0.420214	0.0716024+-0.267586	0.170116+-0.412451	0.418298+-0.64676
ttbar	0.38642+-0.621627	0.716514+-0.846472	0.311651+-0.558257	1.41459+-1.18936
wgamma	3.13314+-1.77007	2.36678+-1.53843	0+-0	5.49992+-2.34519
DYll	0.902281+-0.949885	1.10061+-1.0491	0.362255+-0.601876	2.36515+-1.5379
Background Total	11.6729+-3.41656	18.0823+-4.25232	6.864+-2.61992	36.6187+-6.05134
higgsww	0.500126+-0.707196	1.08754+-1.04285	0.530209+-0.728154	2.11786+-1.45529
data	9	26	12	47

Table 7: Events passing cuts, assuming $M_H^{\rm SM} = 170$ GeV

180GeV	ee	emu	mumu	ll
WW	6.79031+-2.60582	13.0937+-3.61852	5.57043+-2.36018	25.4541+-5.0452
WZ	0.315356+-0.561566	0.488375+-0.698838	0.337471+-0.580922	1.1412+-1.06827
ZZ	0.241401+-0.491326	0.0725064+-0.26927	0.210719+-0.459041	0.524627+-0.724311
ttbar	0.436316+-0.660542	0.82648+-0.909109	0.369345+-0.607738	1.63214+-1.27755
wgamma	2.43229+-1.55958	1.81674+-1.34787	0+-0	4.24903+-2.06132
DYll	0.876646+-0.936294	0.976958+-0.988412	0.267425+-0.517132	2.12103+-1.45638
Background Total	11.0923+-3.33051	17.2748+-4.15629	6.75539+-2.59911	35.1221+-5.92639
higgsww	0.388507+-0.623303	0.815549+-0.903078	0.387051+-0.622134	1.59106+-1.26137
data	9	26	13	48

Table 8: Events passing cuts, assuming $M_H^{\rm SM} = 180$ GeV

190GeV	ee	emu	mumu	ll
WW	6.58656+-2.56643	12.6273+-3.55349	5.30293+-2.30281	24.5165+-4.95142
WZ	0.574667+-0.758068	0.477001+-0.690652	0.533075+-0.73012	1.58474+-1.25886
ZZ	0.5957+-0.771816	0.0701335+-0.264827	0.499505+-0.706757	1.16534+-1.07951
ttbar	0.462123+-0.679797	0.89533+-0.946219	0.42142+-0.649169	1.77887+-1.33374
wgamma	2.16269+-1.47061	1.52317+-1.23417	0+-0	3.68586+-1.91986
DYll	1.20718+-1.09872	0.893403+-0.9452	0.397855+-0.630758	2.49843+-1.58064
Background Total	11.5889+-3.40425	16.4863+-4.06034	7.15479+-2.67484	35.2298+-5.93547
higgsww	0.252339+-0.502334	0.533225+-0.730223	0.250791+-0.500791	1.03633+-1.018
data	11	25	12	48

Table 9: Events passing cuts, assuming $M_H^{\rm SM} = 190$ GeV

200GeV	ee	emu	mumu	ll
WW	6.27676+-2.50535	11.9619+-3.4586	4.94952+-2.22475	23.1881+-4.8154
WZ	1.0672+-1.03305	0.458167+-0.676881	0.851906+-0.922987	2.37726+-1.54184
ZZ	1.30676+-1.14314	0.0656086+-0.256142	1.00242+-1.00121	2.37479+-1.54104
ttbar	0.492263+-0.701615	0.943248+-0.97121	0.437732+-0.661613	1.87324+-1.36866
wgamma	1.92071+-1.3859	1.36066+-1.16647	0+-0	3.28137+-1.81145
DYll	1.52714+-1.23577	0.863252+-0.929114	0.808585+-0.899213	3.19897+-1.78857
Background Total	12.5908+-3.54836	15.6529+-3.95637	8.05017+-2.83728	36.2937+-6.02443
higgsww	0.189767+-0.435622	0.396668+-0.629816	0.181983+-0.426595	0.768412+-0.876591
data	10	22	12	44

Table 10: Events passing cuts, assuming $M_H^{\rm SM} = 200$ GeV

M_H	110	120	130	140	150
WW	10.448+-3.232	14.380+-3.792	18.225+-4.269	21.485+-4.635	23.915+-4.890
WZ	0.393+-0.627	0.537+-0.732	0.677+-0.823	0.805+-0.897	0.910+-0.954
ZZ	0.216+-0.465	0.259+-0.509	0.296+-0.544	0.327+-0.572	0.353+-0.594
ttbar	0.261+-0.511	0.376+-0.613	0.609+-0.780	0.775+-0.881	0.975+-0.987
wgamma	10.373+-3.221	9.655+-3.107	9.818+-3.133	8.096+-2.845	7.500+-2.739
DYll	9.545+-3.089	7.788+-2.791	5.593+-2.365	4.622+-2.150	3.415+-1.848
Background Total	31.236+-5.589	32.994+-5.744	35.217+-5.934	36.109+-6.009	37.069+-6.088
higgsww	0.115+-0.340	0.310+-0.557	0.786+-0.887	1.305+-1.142	1.732+-1.316
data	35	37	37	40	44

Table 11: Acceptances for all masses

M_H	160	170	180	190	200
WW	25.404+-5.040	25.866+-5.086	25.454+-5.045	24.517+-4.951	23.188+-4.815
WZ	0.990+-0.995	1.054+-1.027	1.141+-1.068	1.585+-1.259	2.377+-1.542
ZZ	0.377+-0.614	0.418+-0.647	0.525+-0.724	1.165+-1.080	2.375+-1.541
ttbar	1.203+-1.097	1.415+-1.189	1.632+-1.278	1.779+-1.334	1.873+-1.369
wgamma	6.470+-2.544	5.500+-2.345	4.249+-2.061	3.686+-1.920	3.281+-1.811
DYll	2.902+-1.704	2.365+-1.538	2.121+-1.456	2.498+-1.581	3.199+-1.789
Background Total	37.346+-6.111	36.619+-6.051	35.122+-5.926	35.230+-5.935	36.294+-6.024
higgsww	2.240+-1.497	2.118+-1.455	1.591+-1.261	1.036+-1.018	0.768+-0.877
data	47	47	48	48	44

Table 12: Acceptances for all masses