

Table 1: Data fake rates for Cut-Based e-veto

Selection	fake rate	total(+)	total (-)	stat	bkg
Loose Bar	0.0905640	0.0229183	0.0229091	0.0039574	0.0020996
Loose Cra	0.0355821	0.0111645	0.0105621	0.0096511	0.0025043
Loose End	0.5694116	0.0279158	0.0316165	0.0079854	0.0006659
Loose (TOL) Bar	0.0701448	0.0244846	0.0244742	0.0037905	0.0022124
Loose (TOL) Cra	0.0299199	0.0108203	0.0101917	0.0094511	0.0025929
Loose (TOL) End	0.1422996	0.0228400	0.0239328	0.0065990	0.0026112
Loose (MOL) Bar	0.0238066	0.0062062	0.0062003	0.0033749	0.0022944
Loose (MOL) Cra	0.0070864	0.0094110	0.0090520	0.0082743	0.0026674
Loose (MOL) End	0.0834277	0.0076448	0.0086344	0.0059455	0.0022435
Medium Bar	0.0267895	0.0063588	0.0063538	0.0033954	0.0022339
Medium Cra	0.0185343	0.0102447	0.0101511	0.0093203	0.0028313
Medium End	0.0625312	0.0071386	0.0076906	0.0057137	0.0012295
Medium (TOL) Bar	0.0203785	0.0065052	0.0064888	0.0033190	0.0022961
Medium (TOL) Cra	0.0152275	0.0100926	0.0098774	0.0091884	0.0028868
Medium (TOL) End	0.0384735	0.0081225	0.0084221	0.0053262	0.0022174
Medium (MOL) Bar	0.0156134	0.0061547	0.0061487	0.0032749	0.0023247
Medium (MOL) Cra	0.0050699	0.0096378	0.0093681	0.0084398	0.0028261
Medium (MOL) End	0.0246118	0.0071033	0.0071072	0.0050888	0.0028633
Tight Bar	0.0100277	0.0058111	0.0058070	0.0030482	0.0021662
Tight Cra	0.0052192	0.0091116	0.0088930	0.0082504	0.0026768
Tight End	0.0451017	0.0065357	0.0068837	0.0054222	0.0005742
Tight (TOL) Bar	0.0094525	0.0058425	0.0058388	0.0030421	0.0021368
Tight (TOL) Cra	0.0052236	0.0091131	0.0088942	0.0082529	0.0026723
Tight (TOL) End	0.0247287	0.0068576	0.0070167	0.0051079	0.0011234
Tight (MOL) Bar	0.0071858	0.0058731	0.0058692	0.0030228	0.0020352
Tight (MOL) Cra	0.0011293	0.0089123	0.0086700	0.0078258	0.0025865
Tight (MOL) End	0.0186318	0.0068520	0.0068754	0.0049810	0.0025831

Table 2: Data fake rates for BDT-Based e-veto

Selection	fake rate	total(+)	total (-)	stat	bkg
Loose Bar	0.0272101	0.0090732	0.0090829	0.0036237	0.0037785
Loose Cra	0.0136706	0.0106437	0.0103981	0.0091193	0.0039792
Loose End	0.0632739	0.0128636	0.0133492	0.0060953	0.0052399
Loose (TOL) Bar	0.0252808	0.0089505	0.0089587	0.0036011	0.0037931
Loose (TOL) Cra	0.0136682	0.0105528	0.0103043	0.0091292	0.0039816
Loose (TOL) End	0.0395969	0.0120412	0.0120354	0.0057862	0.0057312
Loose (MOL) Bar	0.0164396	0.0086180	0.0086298	0.0035419	0.0035140
Loose (MOL) Cra	0.0063289	0.0098519	0.0096450	0.0086281	0.0034249
Loose (MOL) End	0.0211681	0.0112086	0.0111163	0.0055446	0.0060751
Medium Bar	0.0117437	0.0081020	0.0081059	0.0034480	0.0031712
Medium Cra	0.0022381	0.0092113	0.0089703	0.0081274	0.0033355
Medium End	0.0129450	0.0107387	0.0106586	0.0053083	0.0049080
Medium (TOL) Bar	0.0111282	0.0080860	0.0080915	0.0034380	0.0031820
Medium (TOL) Cra	0.0022381	0.0092113	0.0089703	0.0081274	0.0033355
Medium (TOL) End	0.0106994	0.0102499	0.0102243	0.0052710	0.0049510
Medium (MOL) Bar	0.0091848	0.0084024	0.0084083	0.0034618	0.0028075
Medium (MOL) Cra	0.0024549	0.0089114	0.0086417	0.0079107	0.0031188
Medium (MOL) End	0.0091902	0.0102623	0.0102152	0.0054110	0.0043734
Tight Bar	0.0076271	0.0074837	0.0074873	0.0033666	0.0024505
Tight Cra	0.0004979	0.0082663	0.0080522	0.0075343	0.0022889
Tight End	0.0051170	0.0083235	0.0081319	0.0051199	0.0042732
Tight (TOL) Bar	0.0072596	0.0074884	0.0074895	0.0033563	0.0024652
Tight (TOL) Cra	0.0004979	0.0082663	0.0080522	0.0075343	0.0022889
Tight (TOL) End	0.0048818	0.0083221	0.0081340	0.0051173	0.0042766
Tight (MOL) Bar	0.0064460	0.0078402	0.0078427	0.0033956	0.0021703
Tight (MOL) Cra	0.0006456	0.0078940	0.0076408	0.0071855	0.0021412
Tight (MOL) End	0.0043512	0.0084482	0.0082588	0.0052656	0.0038797