A ThePEG version ThePEG 02e817c0868e (default) [?] Run Information

Run name: **LHC**:
This run was generated using Herwig [**?**] and the following models:

- The Shower evolution was performed using an algorithm described in [**?**, **?**, **?**, **?**].
- The hadronization was performed using the cluster model of [**?**].
- Decays in Herwig include full spin correlations, based on [**?**].
- Finite width effects for the scalar f_0 and a_0 mesons follow [**?**].
- Lambda$_b$ $to Lambda_c 1(*) used the form factors from$ [**?**]. $Spin-1/2 baryons with one heavy quark were decaye$

- The K pi weak current has the form of [**?**].
- The OneKaonTwoPionCurrent class implements the model of [**?**] for the weak current with three mesons, at least one of which is a kaon.
- The TwoKaonOnePionCurrent class implements the model of [**?**] for the weak current with three mesons, at least one of which is a kaon.
- The current for two kaons from [**?**] was used.
- The decay $\tau^{\pm} \to \omega \to \pi^{\pm}\pi^0\gamma$ is modelled after [**?**].
- The decay of tau to three pions is modelled using the currents from [**?**].
- The decay of the tau to four pions uses currents based on [**?**].
- The form factors from [**?**] were used.
- The form factors of [**?**] for the decay of the B_c meson were used.
- The hadronization used the selection algorithm described in [**?**].
- The model of [**?**] was used for the hadronic five pion current.
- The quark model calculation of [**?**] was usedfor the weak decay of the light baryons
- The three meson decays of the tau, ie pi- pi- pi+, pi0 pi0 pi-, K- pi- K+, K0 pi- Kbar0, K- pi0 K0,pi0 pi0 K-, K- pi- pi+, and pi- Kbar0 pi0, pi- pi0 eta use the same currents as [**?**, **?**, **?**].
- The underlying event was simulated with an eikonal model for multiple partonic interactions.Details can be found in Ref. [**?**, **?**].

- The weak decay current to two scalar mesons is implemented using the models of either Kuhn and Santamaria [**?**] or Gounaris and Sakurai [**?**]. The mixing parameters are taken from [**?**], although the PDG values for the masses and widths are used, for the decay pi+/- pi0. The decay K pi is assumed to be dominated by the lowest lying K* resonance.
- The weak decay of baryons containing a heavy quark used form factors from [**?**, **?**].
- Some decays used the Fortran HERWIG decay algorithm [**?**].
- The non-leptonic decays of the Omega baryon were simulated using the NonLeptonicOmegaDecayer class based on the results of[**?**].
- The MAMBO algorithm of [**?**] was used for high multiplicity decays
- The decay of I=0 vector mesons to three pions via a current taking into account the rho and a possible direct term is taken from [**?**].
- The decay of eta to two pions follows [**?**, **?**, **?**].
- The decay of the Ω^- to $\Xi^{*0}\pi^-$ was simulated using the model of [**?**].
- The decays of $\eta, \eta' \to \pi^+\pi^-\gamma$ were simulated using the matrix elements from [**?**, **?**]
- The decays of $\eta, \eta' \to \pi^0\gamma\gamma$ were simulated using the matrix elements of [**?**]
- The decays of onium resonances to lighter states and pion pairs were modelled using the matrix element of [**?**]. The results of [**?**] are used for $\psi' \to \psi$ and [**?**] for $\Upsilon(3S)$ and $\Upsilon(2S)$ decays. The remaining parameters are choosen to approximately reproduce the distributions from [**?**] and [**?**].
- The decays of the a_1 were modelled using the approach of [**?**].
- The non-leptonic charm decays were simulated using the KornerKramerCharmDecayerclass which implements the model of [**?**].
- The non-leptonic hyperon decays were simulated using the NonLeptonicHyperonDecayer class which implements the model of[**?**]
- The radiative decays of the heavy baryons were simulated using the results of[**?**, **?**].
- The radiative hyperons decays were simulated using the RadiativeHyperonDecayer class which implements the results of [**?**].
- The strong decays of the heavy baryons were simulated using the results of[**?**].

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