Figure 5: Schematics of the different stages of the process $e^+e^- \to hadrons$. The initial $q\bar{q}$ pair with large invariant mass Q initiates a shower which can be followed perturbatively until $L \simeq L_\chi$. At this point the conversion into clusters sets in, which is completed around $L = L_0$ and followed by the decay of clusters into hadron states.

Figure 6: Diagrammatic representation of the kinetic equations (49). **a)** The operator $\hat{\mathcal{K}}$ describes free propagation plus the effect of the mean field. **b)** The integral operators $\hat{A}, \hat{B}, \hat{C}, \ldots$ include the squared amplitudes for the various interaction processes among the different particle species, which change of the particle distributions according to the balance of gain (+) and loss (−) terms.

Figure 7: a) Space-time evolution of the parton density profile (in arbitrary units) in the $(r_z, r_\perp)$-plane at different times in the center-of-mass frame of the initial dijet system with energy $Q = 100$ GeV. **b)** Corresponding development of the cluster density profile as it builds up in time due to the conversion of partons.

Figure 8: a) Time evolution of the kinetic pressures P_{qg} of partons and P_χ of pre-hadronic clusters for $q\bar{q}$-initiated jet evolution, for total jet energies $Q = 10$ GeV (top) and $Q = 100$ GeV (bottom). The dashed and full lines correspond to the two parameter choices $(B^{1/4}, \chi_0)$ =(240,200) MeV and $(B^{1/4}, \chi_0)$ =(180,100) MeV, resulting in $L_c = 0.6\ fm$ and $L_c = 0.8\ fm$, respectively. **b)** As a), but for a gg-initiated jet evolution.

Figure 9: Total transverse momentum $p_\perp(t)$, eq. (88), generated during the time evolution of the system in the center-of-mass of the initial dijet system, in correspondence to Fig. 8: **a)** case of $q\bar{q}$-initiated jet evolution (top); **b)** case of a gg-initiated jet evolution (bottom).

Figure 10: Cluster spectra for $L_c = 0.6\ fm$ (top), and $L_c = 0.8\ fm$ (bottom), and total jet energies $Q = 10$ (100) GeV. **a)** Distribution of the cluster sizes of clusters formed from neighboring partons. **b)** Associated cluster mass spectrum.

Figure 11: As Fig. 10, but now with the additional constraint of a maximum allowed invariant mass per cluster of $M_{crit} = 4$ GeV: **a)** cluster size distribution; **b)** cluster mass spectrum.