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Baryon anticorrelations and the Pauli principle in Pythia

We present a computational investigation of a problem of hadron collisions from recent years, that of baryon anticorrelations. This is an experimental dearth of baryons near other baryons in phase space, not seen upon examining numerical Monte Carlo simulations.
We have addressed one of the best known Monte Carlo codes, Pythia, to see what baryon (anti)correlations it produces, where they are originated at the string-fragmentation level in the underlying Lund model, and what simple modifications could lead to better agreement with data.
We propose two ad-hoc alterations of the fragmentation code, a “one-baryon” and an “always-baryon” policies that qualitatively reproduce the data behaviour, i.e anticorrelation, and suggest that lacking Pauli-principle induced corrections at the quark level could be the culprit behind the current disagreement between computations and experiment.

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