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Fragmentation functions and MHV amplitudes in light-front perturbation theory CHRISTIAN A. CRUZ-SANTIAGO, The Pennsylvania State University, ANNA M. STASTO, The Pennsylvania State University, RIKEN BNL Center, H. Niewodniczanski Institute of Nuclear Physics — We investigate the tree level multi-gluon component of the fragmentation functions within the framework of light-front perturbation theory. Recursion relations are found for the fragmentation functions. We see that these are the light-front analogs of the Berends-Giele recursion relations. We also demonstrate how to obtain scattering amplitudes from the fragmentation functions. Using a special helicity configuration along with the recursion relation we find the first few lowest order maximally-helicity violating amplitudes. For this choice of helicities we then solve the recursion explicitly and observe that the solution carries the same structure as the maximally-helicity violating amplitudes.

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