Interpolating mass gap equation between the instant form and the front form of relativistic dynamics COLTON BRADLEY, CHUENG JI, North Carolina State University — We present a mass gap equation linking between the instant form dynamics and the light-front dynamics by interpolating them together with an interpolation variable. We discuss a nucleon dressed in pion loops with the psudovector πNN coupling and techniques in non-linear dynamics to achieve a numerical result. The equivalence of the light-front, equal-time and covariant formulations in meson-baryon interactions has been previously demonstrated. In particular, the self-energy of a nucleon dressed by pion loops has been discussed to show the universality of the leading nonanalytic behavior of the chiral dynamics consistent with QCD. In this poster, we take the previous self-energy calculation as the kernel of the integral equation and discuss the characteristic of the mass gap equation particularly in the limit of the light-front dynamics.

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