Thus

$$A^{g\,(E)}(\xi,t)=\frac{4}{3}\sum_{\substack{n=1\\\text{odd}}}^{\infty}\sum_{\substack{l=0\\\text{even}}}^{n+1}B^{g\,(E)}_{n\,l}P_l\left(\frac{1}{\xi}\right)\;;$$

$$A^{g\,(M)}(\xi,t)=\frac{4}{3}\sum_{\substack{n=1\\\text{odd}}}^{\infty}\sum_{\substack{l=0\\\text{even}}}^{n+1}B^{g\,(M)}_{n\,l}\frac{1}{\xi}P_l'\left(\frac{1}{\xi}\right)\,. \tag{43}$$

These formal series can be summed exactly as for the case of singlet electric and magnetic quark GPDs. The form of the resulting expression actually differs only by a factor $\frac{1}{3}$. The expressions for gluon electric and magnetic elementary amplitudes read

$$A^{g\,(E)}(\xi,t)$$
$$=\frac{2}{3}\int_0^1\frac{dx}{x}\sum_{\nu=0}^{\infty}x^{2\nu}G^{(E)}_{2\nu}(x,t)\left[\frac{1}{\sqrt{1-\frac{2x}{\xi}+x^2}}+\frac{1}{\sqrt{1+\frac{2x}{\xi}+x^2}}-2\delta_{\nu0}\right]\;; \tag{44}$$

$$A^{g\,(M)}(\xi,t)$$
$$=\left(-\xi\frac{\partial}{\partial\xi}\right)\frac{2}{3}\int_0^1\frac{dx}{x}\sum_{\nu=0}^{\infty}x^{2\nu}G^{g\,(M)}_{2\nu}(x,t)\left[\frac{1}{\sqrt{1-\frac{2x}{\xi}+x^2}}+\frac{1}{\sqrt{1+\frac{2x}{\xi}+x^2}}-2\delta_{\nu0}\right]\,. \tag{45}$$

We introduce electric and magnetic gluon GPD quint-essence functions:

$$N^{g\,(E)}(x,t)=\sum_{\nu=0}^{\infty}x^{2\nu}\;G^{(E)}_{2\nu}(x,t)\,;$$

$$N^{g\,(M)}(x,t)=\sum_{\nu=0}^{\infty}x^{2\nu}\;G^{(M)}_{2\nu}(x,t)\,. \tag{46}$$

The imaginary parts of gluon electric and magnetic elementary amplitudes then read:

$$\mathrm{Im}A^{g\,(E)}(\xi,t)=\frac{\pi H^{g\,(E)}(\xi,\xi,t)}{\xi}=\frac{2}{3}\int_{\frac{1-\sqrt{1-\xi^2}}{\xi}}^{1}\frac{dx}{x}N^{g\,(E)}(x,t)\;\left[\frac{1}{\sqrt{\frac{2x}{\xi}-x^2-1}}\right]\;; \tag{47}$$

$$\mathrm{Im}A^{g\,(M)}(\xi,t)=\frac{\pi H^{g\,(M)}(\xi,\xi,t)}{\xi}=-\frac{2}{3}\int_{\frac{1-\sqrt{1-\xi^2}}{\xi}}^{1}dx\;\left\{\frac{\partial}{\partial x}\frac{N^{g\,(M)}(x,t)}{1-\xi x}\right\}\;\left[\frac{1}{\sqrt{\frac{2x}{\xi}-x^2-1}}\right]\;; \tag{48}$$