

**Ablinger, J.; Blümlein, J.; De Freitas, A.; Hasselhuhn, A.; von Manteuffel, A.; Round, M.; Schneider, C.; Wißbrock, F.**

**The transition matrix element  $A_{gq}(N)$  of the variable flavor number scheme at  $O(\alpha_s^3)$ .** (English)

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Summary: We calculate the massive unpolarized operator matrix element  $A_{gq}^{(3)}(N)$  to 3-loop order in Quantum Chromodynamics at general values of the Mellin variable  $N$ . This is the first complete transition function needed in the variable flavor number scheme obtained at  $O(\alpha_s^3)$ . A first independent recalculation is performed for the contributions  $\propto N_F$  of the 3-loop anomalous dimension  $\gamma_{gq}^{(2)}(N)$ .

**MSC:**

**81V05** Strong interaction, including quantum chromodynamics

**81T15** Perturbative methods of renormalization applied to problems in quantum field theory

**81V35** Nuclear physics

Cited in **3** Documents

**Software:**

Axodraw; Fermat; MATAD

**Full Text:** DOI

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