Reconstruction of heavy quark current correlators at $\mathcal{O}(\alpha_s^3)$

The files of the form `approx_{\delta}n1X.m` with $\delta \in \{v, a, s, p\}$ each contain one typical approximant to the vector, axial-vector, scalar or pseudo-scalar polarisation function with $n_l = X$ light flavours. The approximants are given in terms of

$$z = \frac{q^2}{4m^2}$$

and

$$\text{pi1}[z] = 2(z) = \frac{3}{16\pi^2} \left[ \frac{5}{6} + \frac{13}{6z} - (1 - z)^{\frac{3}{2}} + \frac{2z}{z} \frac{G(z)}{z} + (1 - z)^{\frac{1}{2}} \frac{1 - 16z}{6z} G(z)^2 \right]$$

with

$$I(z) = 6(\zeta_3 + 4 \text{Li}_3(-u) + 2 \text{Li}_3(u)) - 8(2 \text{Li}_2(-u) + \text{Li}_2(u)) \log(u)$$

$$G(z) = \frac{1}{2z} \sqrt{1 - \frac{1}{z}}$$

and

$$u = \frac{\sqrt{1 - \frac{1}{z}} - 1}{\sqrt{1 - \frac{1}{z}} + 1}.$$

`pi1[z]` is also given in computer readable form in the file `pi1.m`