$$\sigma_{I_D} = \sqrt{\frac{1}{16\pi^4}D^2\sigma_b^2 + \frac{1}{16\pi^4}b^2\sigma_D^2}$$

$$\sigma_i = \sqrt{\frac{1}{4\pi^4}D^2\langle T_i\rangle^2\sigma_{\langle T_i\rangle}^2 + \frac{1}{16\pi^4}\langle T_i\rangle^4\sigma_D^2}$$