

GWAS-Metric	Stat	Formula \sim (Eq.)
GM	mean	$\boxed{2 \sum_{a \in \mathcal{A}} F(a)} \sim (110)$ <p>where</p> $F(a) = 2(1 - f_a)^3 f_a + 2f_a^3(1 - f_a) + (1 - f_a)^2 f_a^2$
GM	variance	$\boxed{2 \sum_{a \in \mathcal{A}} F(a)[1 - 2F(a)]} \sim (110)$ <p>where</p> $F(a) = 2(1 - f_a)^3 f_a + 2f_a^3(1 - f_a) + (1 - f_a)^2 f_a^2$
AM	mean	$\boxed{2 \sum_{a \in \mathcal{A}} F(a)} \sim (115)$ <p>where</p> $F(a) = (1 - f_a)^3 f_a + f_a^3(1 - f_a) + (1 - f_a)^2 f_a^2$
AM	variance	$\boxed{\sum_{a \in \mathcal{A}} [G(a) - 4F^2(a)]} \sim (115)$ <p>where</p> $F(a) = 2(1 - f_a)^3 f_a + 2f_a^3(1 - f_a) + (1 - f_a)^2 f_a^2 \quad \text{and}$ $G(a) = (1 - f_a)^3 f_a + f_a^3(1 - f_a) + 2(1 - f_a)^2 f_a^2$
TiTv	mean	$\boxed{(\gamma_0 + \gamma_2 + 2\gamma_1) \sum_{a \in \mathcal{A}} F(a) + \left[\frac{3}{2}(\gamma_0 + \gamma_2) + 2\gamma_1\right] \sum_{a \in \mathcal{A}} G(a)} \sim (131)$ <p>where</p> $F(a) = (1 - f_a)^3 f_a + f_a^3(1 - f_a) \quad \text{and} \quad G(a) = (1 - f_a)^2 f_a^2$
TiTv	mean	$\boxed{\left[\frac{1}{4}(\gamma_0 + \gamma_2) + \gamma_1 \right] \sum_{a \in \mathcal{A}} F(a) + \left[\frac{9}{8}(\gamma_0 + \gamma_2) + 2\gamma_1 \right] \sum_{a \in \mathcal{A}} G(a) + \sum_{a \in \mathcal{A}} \left([\gamma_0 + \gamma_2 + 2\gamma_1] F(a) + \left[\frac{3}{2}(\gamma_0 + \gamma_2) + 2\gamma_1 \right] G(a) \right)^2} \sim (131)$ <p>where</p> $F(a) = (1 - f_a)^3 f_a + f_a^3(1 - f_a) \quad \text{and} \quad G(a) = (1 - f_a)^2 f_a^2$