

$$\frac{1}{\Gamma(2)} \int_0^1 \int_0^1 \frac{\bar{t} - t}{t} dt d\bar{t} = \frac{1}{2} \int_0^1 \int_0^1 \frac{\bar{t} - t}{t} dt d\bar{t} = \frac{1}{2} \left[\int_0^1 \int_0^1 \frac{\bar{t}}{t} dt d\bar{t} - \int_0^1 \int_0^1 \frac{t}{t} dt d\bar{t} \right]$$