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For example $n=2$, $f_i' = \sum a_{ij} f_j$

$$\frac{df_1' \wedge df_2'}{f_1' f_2'} = \frac{d(a_{11}f_1 + a_{12}f_2) \wedge d(a_{21}f_1 + a_{22}f_2)}{f_1' f_2'}$$

$$= \frac{(a_{11}\,df_1 + f_1\,da_{11} + a_{12}\,df_2 + f_2\,da_{12}) \wedge (a_{21}\,df_1 + f_1\,da_{21} + a_{22}\,df_2 + f_2\,da_{22})}{f_1' f_2'}$$

$$= \Delta \frac{df_1 \wedge df_2}{f_1' f_2'} + \frac{(f_1\,da_{11} \wedge a_{21}\,df_1 + f_1\,da_{11} \wedge f_1\,da_{21} + \cdots)}{f_1' f_2'}$$

$$\qquad \qquad '' \ \frac{g\,dz_1 \wedge dz_2}{f_1' f_2'}$$

$g = \sum f_i \cdot b_i$, i.e., $g \in I(f_1, f_2)$.

By the transformation law

$$\mathrm{Res}_{\{0\}}\left(\frac{\Delta\, df_1 \wedge \cdots \wedge df_n}{f_1' \cdots f_n'}\right) = \mathrm{Res}_{\{0\}}\left(\frac{df_1 \wedge \cdots \wedge df_n}{f_1 \cdots f_n}\right),$$

while

$$\mathrm{Res}_{\{0\}}\left(g \frac{dz_1 \wedge \cdots \wedge dz_n}{f_1' \cdots f_n'}\right) = 0,$$

since g is in the ideal.

By the transformation law on P 657,

$$\mathrm{Res}_{\{0\}}\left(\frac{\Delta\, df_1 \wedge \cdots \wedge df_n}{f_1' \cdots f_n'}\right) = \mathrm{Res}_{\{0\}}\left(\frac{\Delta \cdot J_f(z)\, dz_1 \wedge \cdots \wedge dz_n}{f_1' \cdots f_n'}\right) =$$