Special points

$$\varepsilon_0 = \begin{pmatrix}1\\0\\0\\0\\0\end{pmatrix}, \quad E_r = \begin{pmatrix}0\\0\\0\\1\\0\end{pmatrix}, \quad \varepsilon_s = \begin{pmatrix}0\\0\\0\\0\\1\end{pmatrix}$$

proper cycle

touches neither $< \varepsilon_s >$ nor $< E_r >$

$\alpha^0 \neq 0$ and $\alpha^r \neq 0$

point cycle

touches $< E_r >$ but not $< \varepsilon_s >$

$\alpha^r = 0$ and $\alpha^0 \neq 0$

line cycle

touches $< \varepsilon_s >$ but not $< E_r >$

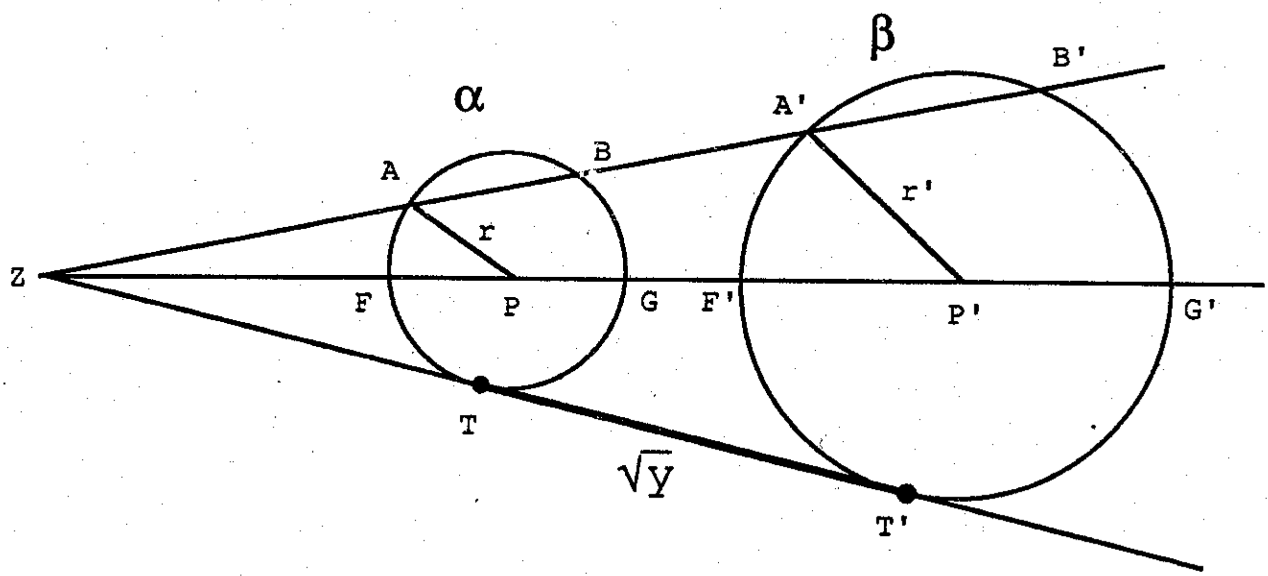
$\alpha^0 = 0$ and $\alpha^r \neq 0$

$\alpha^1 x^1 + \alpha^2 x^2 = \alpha^s$

the special cycle

touches both $< E_r >$ and $< \varepsilon_s >$

$< \varepsilon_s >$ "at infinity"



Relative power

$$y = AA'.BB' = FF'.GG' = TT'.TT' = PP'.PP' - (r' - r)^2$$

$$(-\tfrac{1}{2}\,\alpha^0\beta^0)\,y = \alpha^1\beta^1 + \alpha^2\beta^2 - \alpha^r\beta^r - \alpha^0\beta^s - \alpha^s\beta^0$$

$$(-\tfrac{1}{2}\,\alpha^0\beta^0)\;y = (\alpha|\beta)$$

Touch

cycles $\langle \alpha \rangle$ and $\langle \beta \rangle$

$(\alpha|\beta) = 0$

$\langle \alpha \rangle \subset \langle \beta \rangle^{\perp}$ and $\langle \beta \rangle \subset \langle \alpha \rangle^{\perp}$

$\langle \alpha , \beta \rangle \subset \Omega^3$

non-cycle $\langle A \rangle$ and cycle $\langle \beta \rangle$

$(A|\beta) = 0$

$\langle \beta \rangle \subset \langle A \rangle^{\perp}$