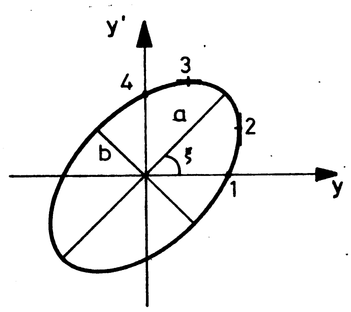
3.4 Geometrical properties of the ellipse



	$\alpha, \beta, \gamma, \epsilon$	$c_1 \quad c_2$ $c_3 \quad c_4$	L, S, ϵ
	$\beta\gamma - \alpha^2 = 1$ $H = \frac{1}{2}(\beta + \gamma)$	$\epsilon = c_1c_4 - c_2c_3$ $H = \frac{1}{2}(c_1^2 + c_2^2 + c_3^2 + c_4^2)/\epsilon$	$H = \frac{1}{2L}(L^2 + S^2 + 1)$
y_1	$\sqrt{\epsilon/\gamma}$	$\epsilon/\sqrt{c_3^2 + c_4^2}$	$\sqrt{\epsilon L}$
y_2	$\sqrt{\epsilon\beta}$	$\sqrt{c_1^2 + c_2^2}$	$\sqrt{\epsilon/L}\,\sqrt{S^2 + L^2}$
y_2'	$-\alpha\sqrt{\epsilon/\beta}$	$(c_1c_3 + c_2c_4)/\sqrt{c_1^2 + c_2^2}$	$S\sqrt{\epsilon/L}/\sqrt{S^2 + L^2}$
y_3	$-\alpha\sqrt{\epsilon/\gamma}$	$(c_1c_3 + c_2c_4)/\sqrt{c_3^2 + c_4^2}$	$S\sqrt{\epsilon/L}$
y_3'	$\sqrt{\epsilon\gamma}$	$\sqrt{c_3^2 + c_4^2}$	$\sqrt{\epsilon/L}$
y_4'	$\sqrt{\epsilon/\beta}$	$\epsilon/\sqrt{c_1^2 + c_2^2}$	$\sqrt{\epsilon L}/\sqrt{S^2 + L^2}$
a	$\sqrt{\epsilon/2}\,(\sqrt{H + 1} + \sqrt{H - 1})$		
b	$\sqrt{2\epsilon}/(\sqrt{H + 1} + \sqrt{H - 1}) = \sqrt{\epsilon/2}\,(\sqrt{H + 1} - \sqrt{H - 1})$		
a/b > 1	$H + \sqrt{H^2 - 1}$		
$\tan\xi$	$[-\alpha(H + \sqrt{H^2 - 1})]/[\beta(H + \sqrt{H^2 - 1}) - 1]$	$[c_2 + c_3(H + \sqrt{H^2 - 1})]/[c_1(H + \sqrt{H^2 - 1}) - c_4]$	$S/[L(H + \sqrt{H^2 - 1}) - 1]$
$\sin 2\xi$	$-\alpha/\sqrt{H^2 - 1}$	$(c_1c_3 + c_2c_4)/\epsilon\sqrt{H^2 - 1}$	$S/L\sqrt{H^2 - 1}$
$\cos 2\xi$	$(\beta - \gamma)/2\sqrt{H^2 - 1}$	$(c_1^2 + c_2^2 - c_3^2 - c_4^2)/2\epsilon\sqrt{H^2 - 1}$	$(L^2 + S^2 - 1)/2L\sqrt{H^2 - 1}$
$\tan 2\xi$	$-2\alpha/(\beta - \gamma)$	$2(c_1c_3 + c_2c_4)/(c_1^2 + c_2^2 - c_3^2 - c_4^2)$	$2S/(L^2 + S^2 - 1)$