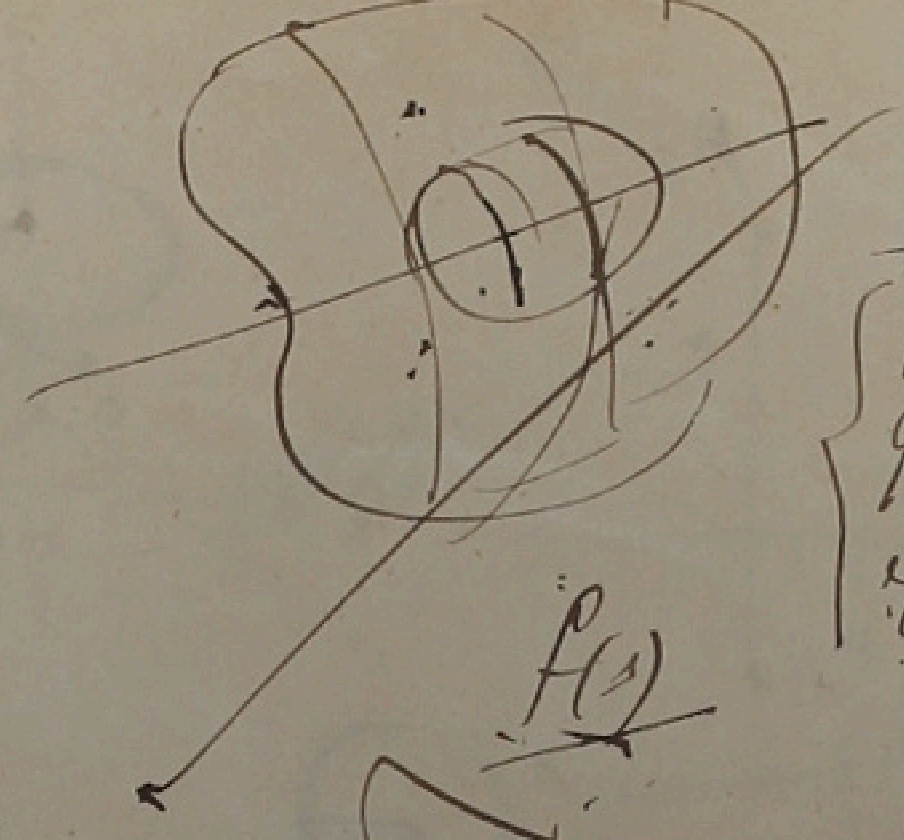
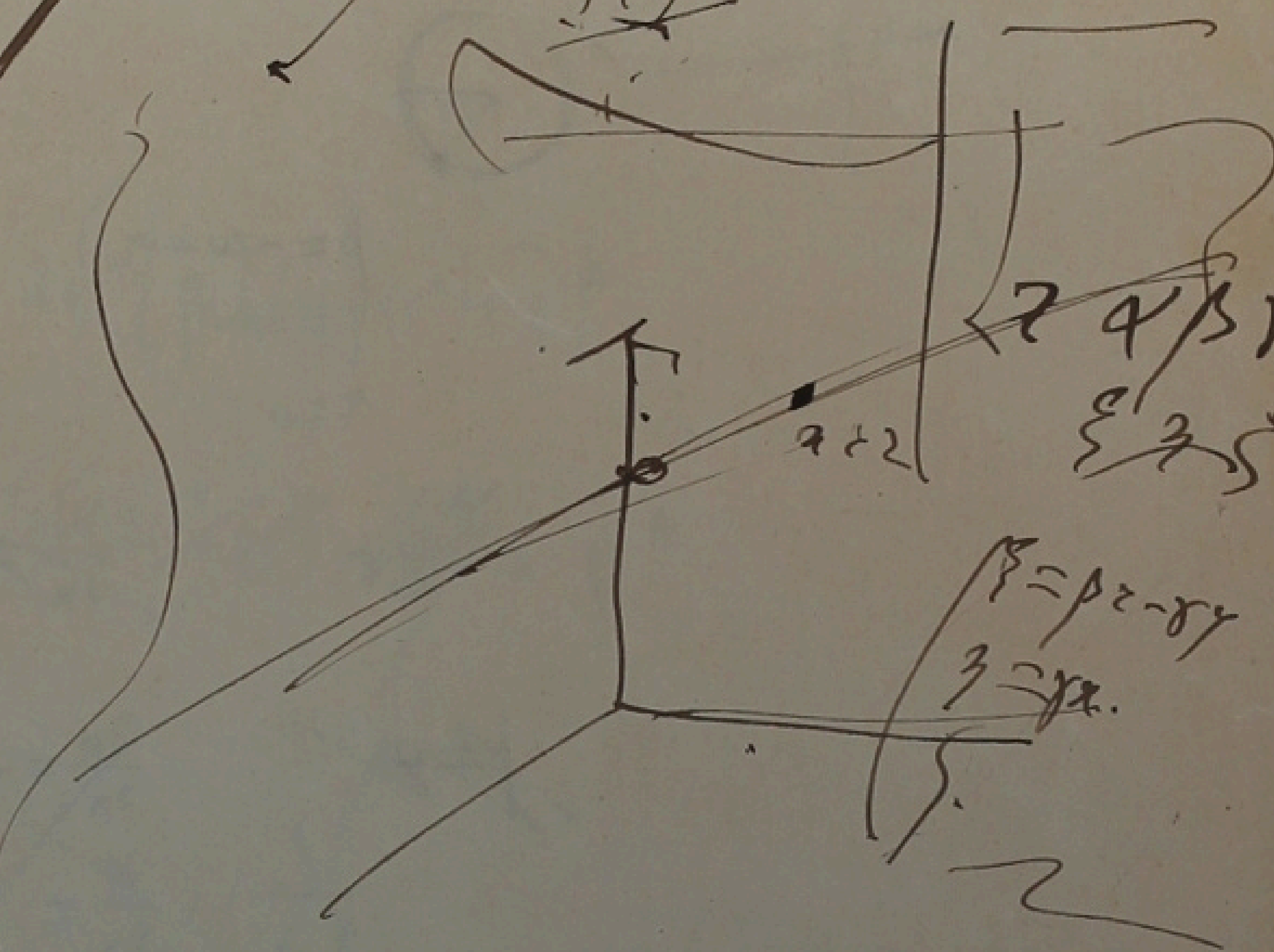


$p\,q$

$p = f(\ldots)$

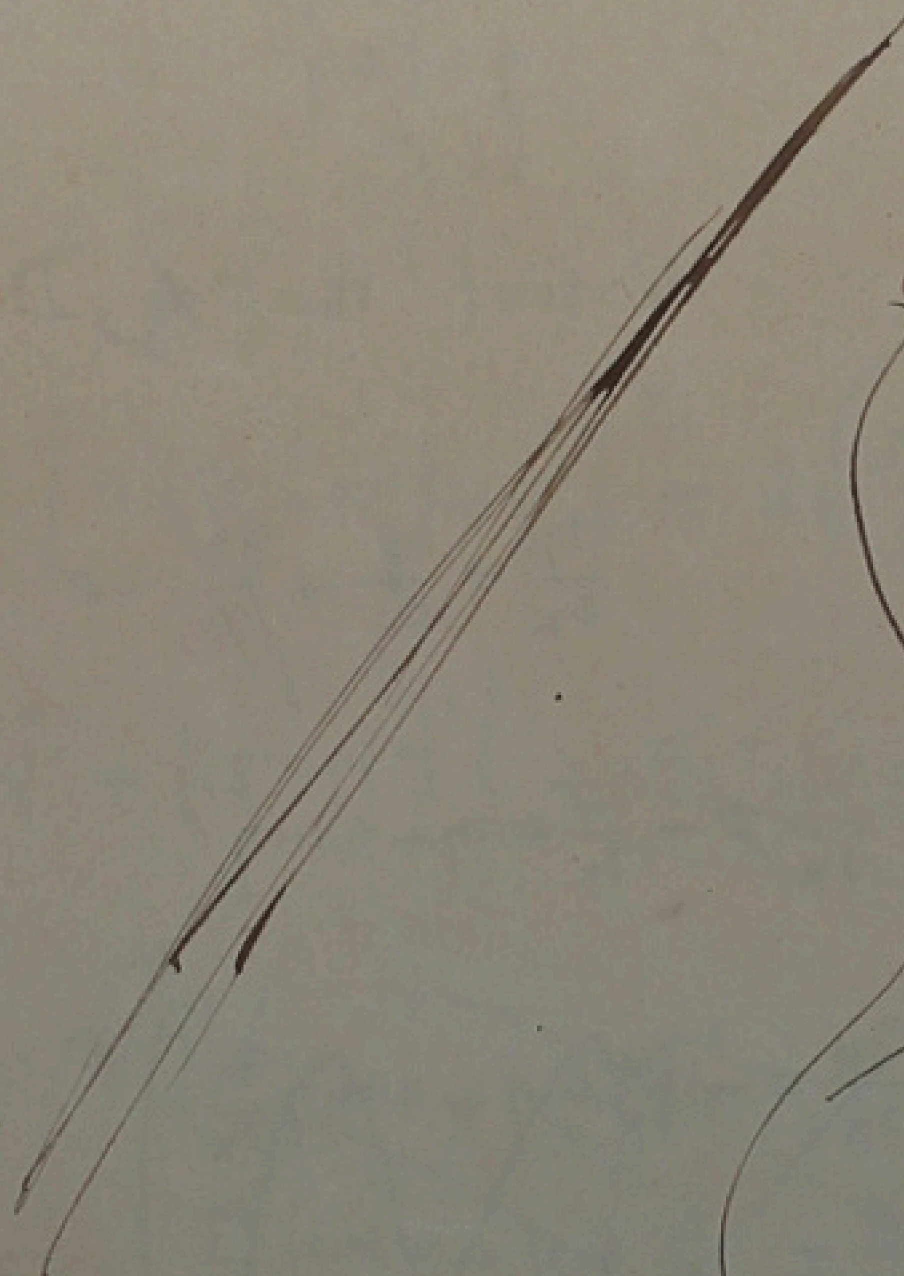
$f(s)$



$\alpha\,\beta\,\gamma$

$\xi = \beta z - \gamma y$

$\zeta = \gamma x$

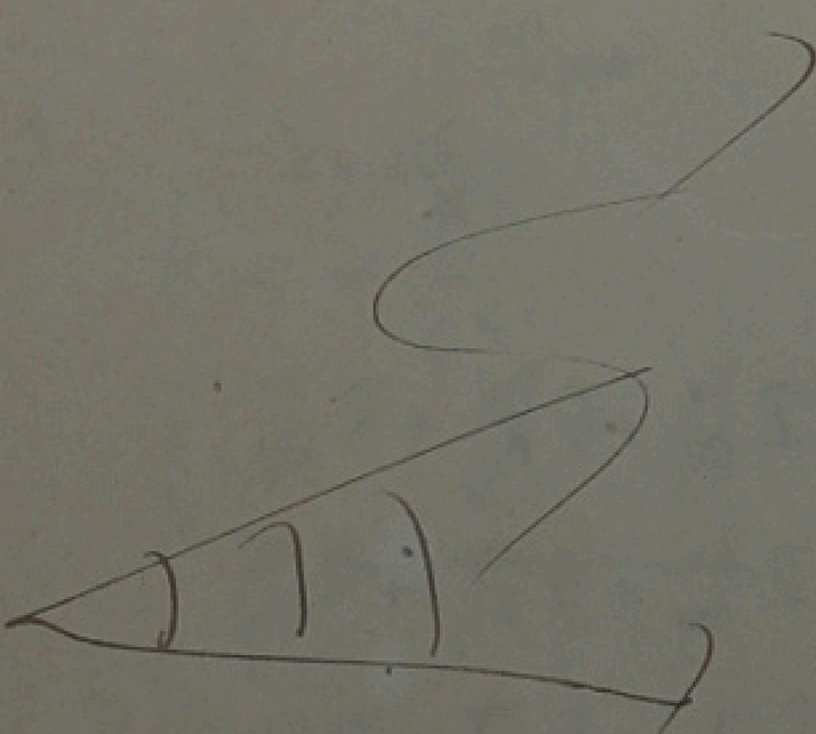


$\xi' = \frac{\xi}{\rho}$

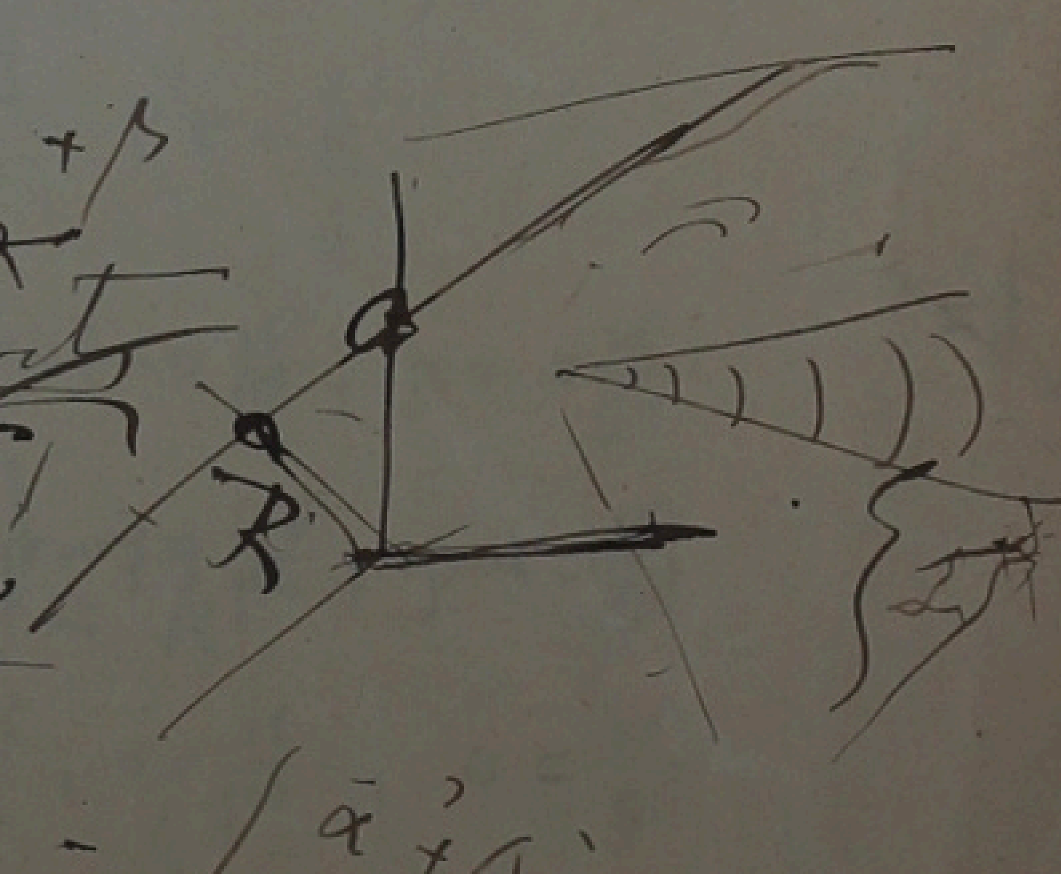
$\eta' = \frac{\xi}{r}\,\gamma$

$\zeta' = -\frac{\xi}{\rho} - \frac{\eta}{r} + \beta$

$\rho,\ r$



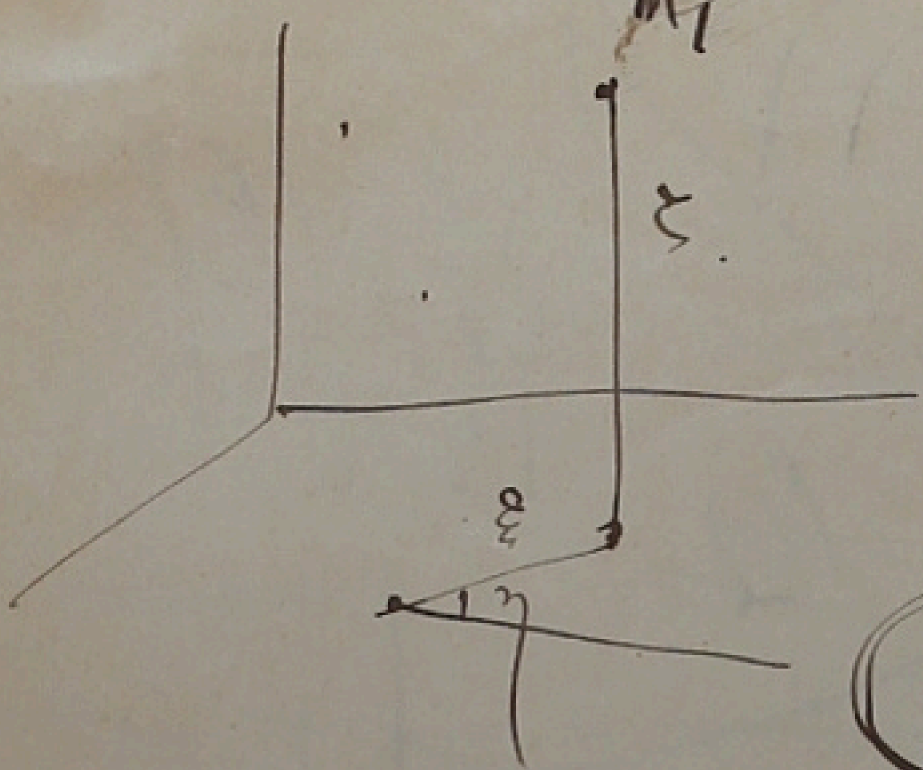
$\zeta = 0$

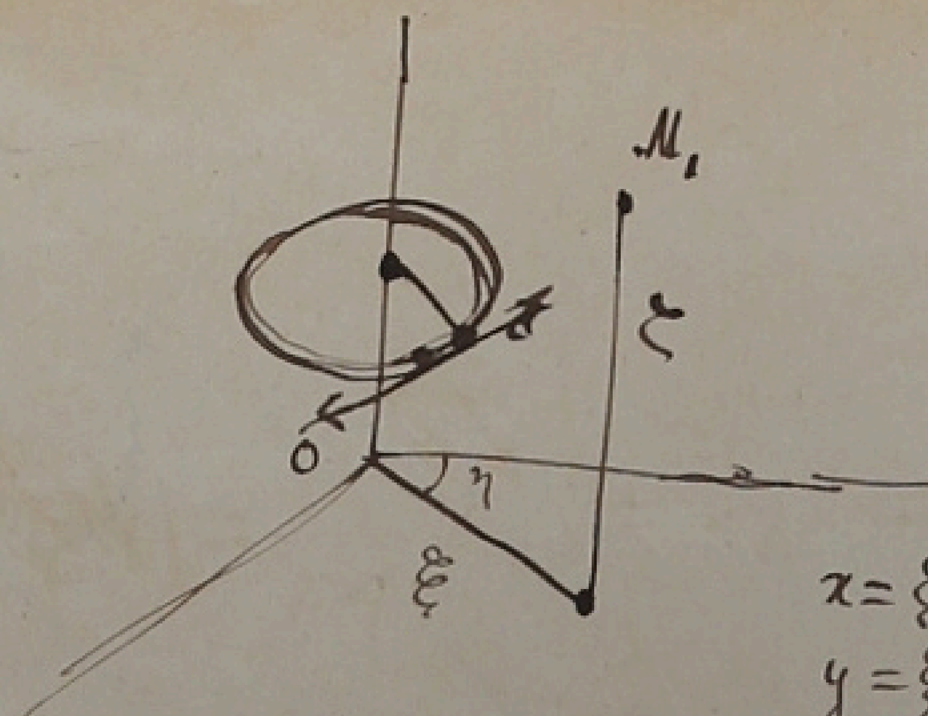


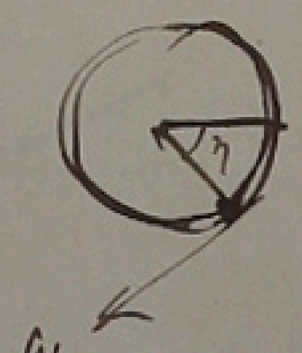
$\zeta = 0$

$\alpha + \beta$

$k'dk' = k''dk$







$x = \xi \cos\eta$
$y = \xi \sin\eta$
$z = \zeta$

$\sqrt{a} = \sqrt{c} = 1 \quad \sqrt{b} = \xi, \quad D = \xi$

$p = -\omega \sin\eta$
$q = \omega\cos\eta$
$r = 0$

$$\frac{\partial p}{\partial x} + \frac{\partial q}{\partial y} + \cancel{\frac{\partial r}{\partial z}} = 0$$

$\eta = \operatorname{arctg}\frac{y}{x}$

$\frac{\partial \eta}{\partial x}$

$$\cancel{\frac{\partial p}{\partial x} = -\frac{\partial\omega}{\partial x}\sin\eta - \omega\cos\eta}$$

$$\cancel{\frac{\partial p}{\partial x} = -\frac{\partial \omega}{\partial x}\sin\eta - \omega\cos\eta\frac{\partial\eta}{\partial x}}$$
$$\cancel{\frac{\partial q}{\partial y} = \frac{\partial\omega}{\partial y}\cos\eta - \omega\sin\eta\frac{\partial\eta}{\partial y}}$$

$$\cancel{\frac{\partial p}{\partial \xi}\frac{\partial\xi}{\partial x} + \frac{\partial p}{\partial\eta}\frac{\partial\eta}{\partial x} + \frac{\partial p}{\partial\zeta}\frac{\partial\zeta}{\partial x}}$$

$\omega^2 = p^2 + q^2 + r^2$

$$\cancel{\omega\frac{\partial\omega}{\partial\eta} = p\frac{\partial p}{\partial\eta} +}$$

$\cancel{\cos\eta\frac{\partial\eta}{}}$

$\cancel{\frac{\partial\eta}{\partial x}\sin\eta =}$

$$\frac{\partial x}{\partial\xi} = \cos\eta, \quad \frac{\partial x}{\partial\eta} = -\xi\sin\eta, \quad \frac{\partial x}{\partial\zeta} = 0$$
$$\frac{\partial y}{\partial\xi} = \sin\eta, \quad \frac{\partial y}{\partial\eta} = \xi\cos\eta, \quad \frac{\partial y}{\partial\zeta} = 0$$
$$\frac{\partial z}{\partial\xi} = 0, \quad \frac{\partial z}{\partial\eta} = 0, \quad \frac{\partial z}{\partial\zeta} = 1$$

$$\left\{\begin{aligned}\bar{P} &= P\frac{\partial x}{\partial\xi} + Q\frac{\partial y}{\partial\xi} + R\frac{\partial z}{\partial\xi}\\ \bar{Q} &= P\frac{\partial x}{\partial\eta} + Q\frac{\partial y}{\partial\eta} + R\frac{\partial z}{\partial\eta}\\ \bar{R} &= P\frac{\partial x}{\partial\zeta} + Q\frac{\partial y}{\partial\zeta} + R\frac{\partial z}{\partial\zeta}\end{aligned}\right.$$

$$\left\{\begin{aligned}\bar{P} &= P\cos\eta + Q\sin\eta\\ \bar{Q} &= (-P\sin\eta + Q\cos\eta)\,\xi\\ \bar{R} &= \cancel{R}\ 0\end{aligned}\right.$$

$$P = \frac{1}{4\pi}\int\frac{p\,dS}{r}$$
$$Q = \frac{1}{4\pi}\int\frac{q\,dS}{r}$$
$$R = \frac{1}{4\pi}\int\frac{r\,dS}{r} = 0$$

$$\left.\begin{aligned}\eta + \frac{\partial p}{\partial y}\xi\cos\eta\\ + \frac{\partial q}{\partial y}\xi\cos\eta\end{aligned}\right\}\begin{aligned}&-\omega\sin\eta\\ &\omega\cos\eta\end{aligned}$$

$$\left[a^2(2\rho'^2-\rho\rho'')+\rho^2\right]t=a^3\rho'$$

$\rho=\text{cost}$

$$a\rho'\cdot\frac{a^3\rho'}{[\dots]^2}=2\rho^2\cdot\frac{1}{[\dots]}-1$$

$$a^4\rho'^2=2\rho^2[\dots]-[\dots]^2$$

$$a^4\rho'^2+\left[a^2(2\rho'^2-\rho\rho'')+\rho^2\right]^2=2\rho^2\left[a^2(2\rho'^2-\rho\rho'')+\rho^2\right]$$

$$a^4\left\{\rho'^2+(2\rho'^2-\rho\rho'')^2\right\}+\cancel{2a^2\rho^2(2\rho'^2-\rho\rho'')}=\rho^4$$

$2\rho'^2-\rho\rho''$

$\frac{\rho'}{\rho^2}$

$\alpha\rho^2 \quad \rho'' \quad \rho'^2$

$\alpha=1 \quad \beta=2$

$$\frac{1}{\rho}=k$$

$$k'=-\frac{\rho'}{\rho^2}$$

$$k''=-\frac{\rho\rho''-2\rho'^2}{\rho^3} \qquad 2\rho'^2-\rho\rho''=\frac{k''}{k^3} \qquad \rho'=-\frac{k'}{k^2}$$

$$a^4\left(\frac{k^2k'^2}{\cancel{k^4}}+\frac{k''^2}{\cancel{k^6}}\right)=k^2$$

$$k^2k'^2+k''^2=\frac{k^2}{a^4} \qquad k'dk'=k''dk$$

$$k'=\frac{1}{a^2}\sin\varphi$$

$$k''=\frac{k}{a^2}\cos\varphi=\frac{\cos\varphi}{a^2}\varphi'$$

$k^2k'^2dk^2+k'^2\dots$

$\varphi'=k$

Je ~~[illegible]~~ de M. G. Pirondini, qui à l'Institut technique de Parme, vient de m'écrire qu'il croit vous avoir ~~déjà fait~~ ~~la~~ précédé dans votre recherche sur l'hélice cylindrique.

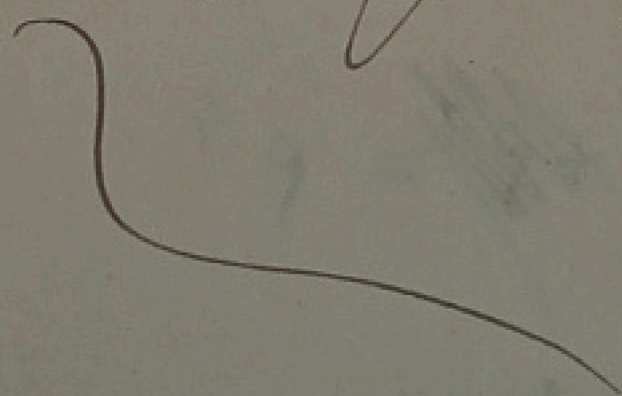
Il croit se rappeler, que dans ~~le tome~~ son mémoire "..." (~~Journal~~ Crelle's Journal, 1897), il a justement établi que l'hélice cylindrique ordinaire n'est pas la seule ligne qui [illegible] hélice [illegible], et qu'il y a une infinité de lignes jouissant de la même propriété ~~et telles~~ (appelées [illegible]). [illegible] que votre Note sur les hélices [illegible] vous ait plu

Cet article dans ce titre "Sur ...

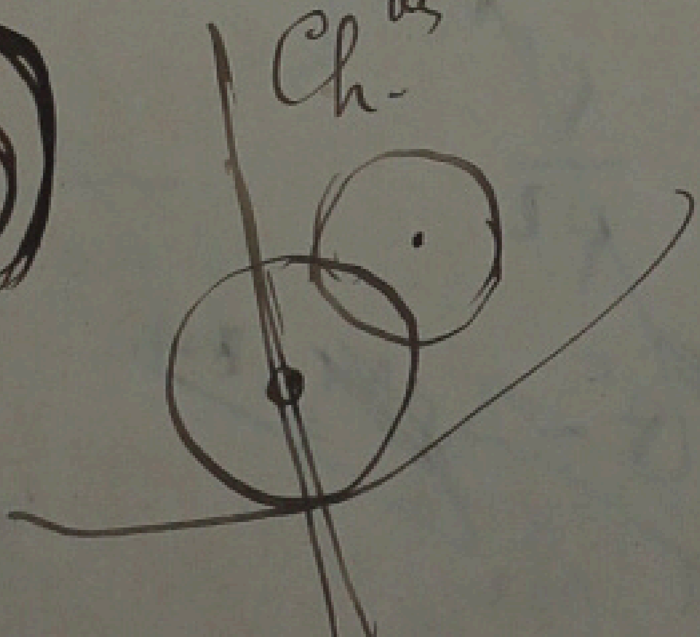
... " ~~publié~~ (...);

~~[illegible]~~ il ne [illegible] ... il [illegible]

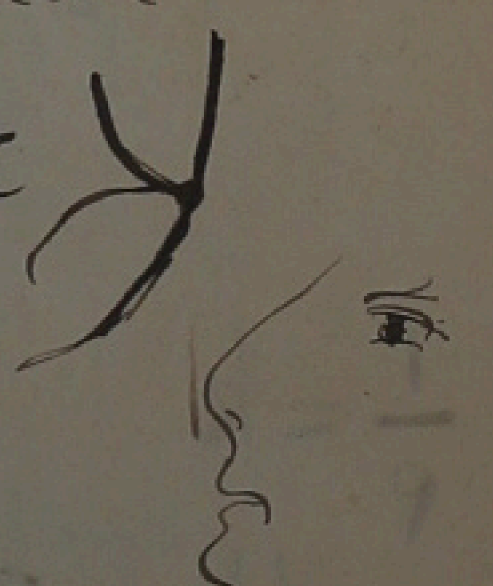
[illegible]

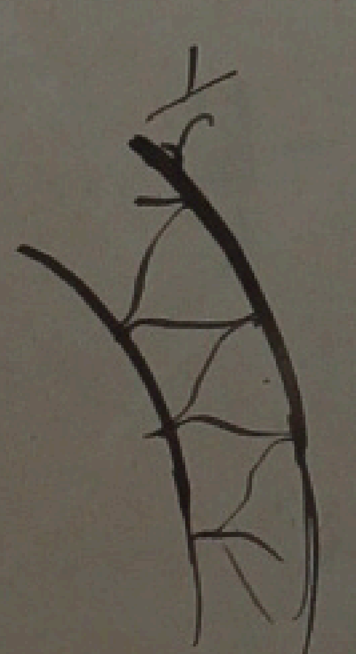


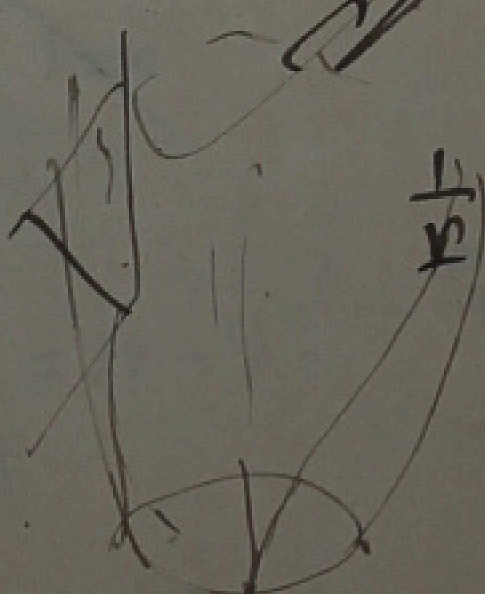
Ch.[es]



$-\rho' = \cancel{\sqrt{a^2-\rho^2}}$







$$\frac{1}{r} = \frac{-\rho'}{\sqrt{a^2-\rho^2}}$$

$$\rho = f(s)$$

$$\frac{1}{r} = \frac{-f'(s)}{\sqrt{a^2-f^2}}$$