$\frac{\partial}{\partial x}$ $\quad x - z z_x = 0$

$\frac{\partial}{\partial y}$ $\quad -y - z z_y = 0$

$\frac{\partial^2}{\partial x^2}$: $\quad 1 - z_x^2 - z z_{xx} = 0$

$\frac{\partial^2}{\partial x \partial y}$: $\quad z_y z_x + z z_{xy} = 0$

$\frac{\partial^2}{\partial y^2}$: $\quad +1 + z_y^2 + z z_{yy} = 0$

$\underline{p}_0 : (0, 0, 1) : \quad z_x^0 = z_y^0 = 0$ [Chiaro]

$1 - 1 \cdot z_{xx}^0 = 0 \qquad z_{xx}^0 = +1$

$0 + 1 \cdot z_{xy}^0 = 0 \qquad z_{xy}^0 = 0$

$+1 + 0 + z_{yy}^0 = 0 \qquad z_{yy}^0 = -1$

$E^0 = \|r_x^0\|^2 = G^0 = \|r_y^0\| = 1$

$F^0 = \langle r_x^0, r_y^0 \rangle = 0$

$e^0 = +1, \ f^0 = 0, \ g^0 = -1$

$\underline{r}_x \times \underline{r}_y = -z_x \underline{i} - z_y \underline{j} + \underline{k}$

$\underline{N} = \left(\frac{-z_x}{\sqrt{1+z_x^2+z_y^2}}, \frac{-z_y}{\sqrt{\circ}}, \frac{1}{\sqrt{\circ}} \right)$

$\underline{N}^0 = (0, 0, 1)$

[Chiaro a priori!]

$\underline{r}_x \times \underline{r}_y = \begin{vmatrix} \underline{i} & \underline{j} & \underline{k} \\ 1 & 0 & z_x \\ 0 & 1 & z_y \end{vmatrix}$

$= \underline{i}(-z_x) - \underline{j} z_y + \underline{k}$

$\underline{r} = (x, y, z(x,y))$

$\underline{r}_x = (1, 0, z_x)$

$\underline{r}_y = (0, 1, z_y)$

$\underline{r}_{xx} = (0, 0, z_{xx})$

$\underline{r}_{xy} = (0, 0, z_{xy}) = \underline{r}_{yx}$

$\underline{r}_{yy} = (0, 0, z_{yy})$,