Let Y^{n-1}

Solution of equation $\Phi(x,u,p)=0$

Let Y^{n-1} be a surface in V^n and φ function on Y^{n-1}

We have to find function u such that

$$\Phi(x,u,p)=0\,,,u\big|_Y=\varphi$$

'*Solution*

Characteristic vector field is

$$\mathbf{X}=-\frac{\partial\Phi}{\partial p_m}\frac{\partial}{\partial_m}+\left(\frac{\partial\Phi}{\partial x^m}+p_m\frac{\partial\Phi}{\partial y}\right)\frac{\partial}{\partial}+p_r\frac{\partial\Phi}{\partial p_r}\frac{\partial}{\partial u}$$

This vector field is

i) tangent to the surface M

ii) it vanishes contact form

iii) it is symplectoorthogonal to $2n-1$ dimensional plane P=intersection of tangent and contact plane.

Hence applied to initial manifold it gives the