

$$x=\frac{1}{x}r$$

$$ds^2_{\rm ALF} \,=\, H_1\left(\underline{r}+r^2\frac{1}{\underline{x}}\right)+H_1^{-1}\left(d\psi+\omega|\underline{x}\right)^2$$

$$\nabla \times \omega = \nabla \left(\frac{1}{r} \right)$$