

$$\begin{aligned}
 & + \underline{g}(\alpha(\nabla_X z), \eta) + \underline{g}(\alpha(\nabla_Y z), \eta) \\
 & - \underline{g}(\alpha(\nabla_X z), \eta) - \underline{g}(\alpha(\nabla_Y z), \eta) \\
 & = \underline{g}(\nabla_Y \alpha(X, z)) + A_{\nabla_Y} \alpha(X, z), \eta) \\
 & - \underline{g}(\nabla_X \alpha(X, z), \eta)
 \end{aligned}$$

$$\begin{aligned}
 & = \underline{g}(\nabla_Y \nabla_X z - \nabla_X \nabla_Y z, \eta) \\
 & - \underline{g}(\nabla_X \nabla_Y z - \nabla_Y \nabla_X z, \eta)
 \end{aligned}$$

$$\begin{aligned}
 & + \underline{g}(\nabla_{\nabla_Y X} z, \eta) + \underline{g}(\nabla_{\nabla_X Y} z, \eta) \\
 & - \underline{g}(\nabla_{\nabla_X Y} z, \eta) - \underline{g}(\nabla_{\nabla_Y X} z, \eta)
 \end{aligned}$$

$$\underline{g}(\nabla_{[X, Y]} z, \eta)$$

$$= \underline{R}(X, Y, z, \eta) \quad \#$$

For if  $\bar{M}$  has const. sect. curvature, then  $(\nabla_X \alpha)(Y, z, \eta) = (\nabla_Y \alpha)(X, z, \eta)$ .