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$$\begin{aligned}
 & \underbrace{g(\bar{R}(X,Y)Z,W)}_{\parallel} \\
 & \underbrace{g(\alpha(X,W),\xi)}_{\parallel} \\
 & = R(X,Y,Z,W) + h'(X,Z)h'(R,W) - h'(Y,Z)h'(X,W) \\
 & = g(R(X,Y)Z,W) + h'(Y,Z)(-g(A_{\xi}(X),W) + h'(X,Z)g(A_{\xi}(X),W)) \\
 & = g(R(X,Y)Z,W) + R^2(Y,Z)g(\bar{\nabla}_X \xi, W) - h'(X,Z)g(\bar{\nabla}_X \xi, W) \\
 & g(\bar{R}(X,Y)Z,W) = g(\bar{\nabla}_X(\bar{\nabla}_Y Z) - \bar{\nabla}_Y(\bar{\nabla}_X Z) - \bar{\nabla}_{[X,Y]}Z, W)
 \end{aligned}$$

$$\begin{aligned}
 \bar{\nabla}_{[X,Y]}Z &= \bar{\nabla}_X \bar{\nabla}_Y Z + h'([X,Y],Z)\xi \\
 &= \bar{\nabla}_X Z + h'([X,Y],Z)\xi + h'(\bar{\nabla}_Y Z) - h'(\bar{\nabla}_X Z)\xi
 \end{aligned}$$

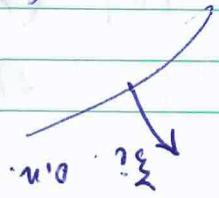
$$\begin{aligned}
 \bar{\nabla}_Y(\bar{\nabla}_X Z) &= \bar{\nabla}_Y(\bar{\nabla}_X Z) + h'(Y, \bar{\nabla}_X Z)\xi \\
 &+ Y h'(X,Z)\xi + h'(X,Z)\bar{\nabla}_Y \xi
 \end{aligned}$$

~~$\bar{\nabla}_X \bar{\nabla}_Y Z$~~

$$\begin{aligned}
 & + X h'(Y,Z)\xi + h'(Y,Z)\bar{\nabla}_X \xi \\
 & = \bar{\nabla}_X(\bar{\nabla}_Y Z) + h'(X, \bar{\nabla}_Y Z)\xi
 \end{aligned}$$

$$\bar{\nabla}_X(\bar{\nabla}_Y Z) = \bar{\nabla}_X(\bar{\nabla}_Y Z + \alpha(Y,Z))$$

\parallel
 $h'(Y,Z)\xi$



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