

# DUALITY PRINCIPLE AND SPECIAL OSSERMAN MANIFOLDS

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A generalized duality principle is a property

$$\mathcal{J}_X(Y) = \varepsilon_X \lambda Y \Rightarrow \mathcal{J}_Y(X) = \varepsilon_Y \lambda X,$$

where  $\varepsilon_X = g(X, X)$  is a norm, and  $\mathcal{J}_X(Y) = \mathcal{R}(Y, X)(X)$  is a Jacobi operator. We investigate connection between duality principle and Osserman manifolds in pseudo-Riemannian settings.

García-Río and Vázquez-Lorenzo proposed the concept of special Osserman manifolds [2, 3] and they gave the complete classification. Special Osserman manifolds are related with a curvature tensor with diagonalizable reduced Jacobi operator with exactly two distinct eigenvalues. There are additional properties and we try to exclude one which represents duality principle.

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