**Prvanović, M.**

**A quasi-umbilical hypersurface of a conformally recurrent space.** (English) Zbl 0789.53012

Szenthe, J. (ed.) et al., Differential geometry and its applications. Proceedings of a colloquium, held in Eger, Hungary, August 20-25, 1989, organized by the János Bolyai Mathematical Society. Amsterdam: North- Holland Publishing Company. Colloq. Math. Soc. János Bolyai. 56, 617-628 (1992).

An $(n+1)$-dimensional $(n \geq 4)$ Riemannian manifold $(\overline{M}, \overline{g})$ is called a conformally recurrent manifold if its Weyl conformal curvature tensor $\overline{C}$ takes the form $\overline{\nabla C} = \overline{a} \otimes \overline{C}$ for some 1-form $\overline{a}$, called the recurrence 1-form. A hypersurface $(M, g)$ of $\overline{M}$ is called a quasi-umbilical hypersurface if the second fundamental form $h$ of $M$ in $\overline{M}$ satisfies $h = \alpha g + \beta v \otimes v$, where $\alpha$ and $\beta$ are certain functions and $v$ is a 1-form on $M$. When $v$ is torse-forming, the author obtains conditions for $M$ to be conformally recurrent with the recurrent 1-form being the pull-back of the recurrent 1-form of $\overline{M}$. He also obtains conditions for the hypersurface to be conformally flat.

For the entire collection see [Zbl 0764.00002].

Reviewer: B.-Y.Chen (East Lansing)

**MSC:**

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**Keywords:**

conformally recurrent manifold; Weyl conformal curvature tensor; quasi- umbilical; conformally flat