

## TOTALLY UMBILICAL SLANT SUBMANIFOLDS OF RIEMANNIAN PRODUCT MANIFOLDS

Meraj Ali Khan<sup>1</sup> and Falleh R. Al-Solamy<sup>2</sup>

<sup>1</sup>Department of Mathematics, University of Tabuk, K.S.A.  
Email: [meraj79@gmail.com](mailto:meraj79@gmail.com)

<sup>2</sup>Department of Mathematics, King Abdulaziz University  
P.O. Box 80015, Jeddah 21589, Kingdom of Saudi Arabia  
E-mail: [fallah@hotmail.com](mailto:fallah@hotmail.com)

**Abstract.** In this paper we show that every totally umbilical slant submanifold of dimension  $\geq 4$  is an extrinsic sphere. We also provide the non trivial examples of totally umbilical slant submanifolds of Riemannian product manifolds.

**Keywords.** totally umbilical, slant submanifold, Riemannian product manifold.

**AMS (MOS) subject classification:** 53C25, 53C40, 53C42, 53D15.

## References

- [1] Atceken M, Slant Submanifolds of a Riemannian Product Manifold, *Acta Mathematica Scientia* 2009; 29B(6): 1-10.
- [2] Chen B Y, Slant Immersions, *Bull Aust Math Soc*, 1990; 41: 135-147.
- [3] Carriazo A, *New Developments in Slant Submanifolds Theory*, New Delhi, India: Narosa Publishing House, 2002.
- [4] Deshmukh S, Husain S. I., Totally umbilical CR-submanifolds of a Kaehler manifold, *Kodai Math. J.*, 1986; 9(3): 425-429.
- [5] Lotta A, Slant Submanifolds in Contact Geometry, *Bull. Math. Soc. Roum.* 1996; 39: 183-198.
- [6] Sahin B, Every totally umbilical proper slant submanifold of a Kaehler manifold is totally geodesic, *Results in Math.*, 2009; 54: 167-172.
- [7] Senlin X, Yilong N, Submanifolds of Product Riemannian Manifold, *Acta Mathematica Scientia*, 2000; 20B: 213-218.
- [8] Souam Rabah, Veken Joeri Van Der, Totally umbilical hypersurfaces of manifolds admitting a unit killing field, *Trans. Amer. Math. Soc.*, 2012; 364 (7): 3609-3626.

Received February 2014; revised August 2014.

email: [journal@monotone.uwaterloo.ca](mailto:journal@monotone.uwaterloo.ca)  
<http://monotone.uwaterloo.ca/~journal/>