

Lagrangian submanifolds with constant angle functions in the nearly Kähler $\mathbb{S}^3 \times \mathbb{S}^3$

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In this work, we discuss Lagrangian submanifolds in the nearly Kähler $\mathbb{S}^3 \times \mathbb{S}^3$. First, we investigate how changing the immersion affects the so-called angle functions which describe the geometry of the submanifolds. Then, we classify the Lagrangian submanifolds in the nearly Kähler $\mathbb{S}^3 \times \mathbb{S}^3$ for which all angle functions are constant. This classification is related to totally geodesic Lagrangian submanifolds or Lagrangian submanifolds with constant sectional curvature which are studied in [1] and [2], respectively. Finally, we focus on some specific values of angle functions.

Joint work with Marilena Moruz, Joeri Van der Veken and Luc Vrancken.

- [1] Zhang Y, Hu Z, Dioos B, Vrancken L, Wang X. Lagrangian submanifolds in the nearly Kähler manifolds with parallel second fundamental form. *Journal of Geometry and Physics*, submitted.
 - [2] Dioos B, Vrancken L, Wang X. Lagrangian submanifolds in the nearly Kähler $\mathbb{S}^3 \times \mathbb{S}^3$. 2016; arXiv:1604.05060.
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