

On a class of almost Hermitian 4-manifolds

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Using an integral identity proved by Sekigawa [1] on compact almost Hermitian 4-manifolds, we naturally obtain a global characterization of the class $\mathcal{AH}_1$ of almost Hermitian 4-manifolds satisfying the first Gray curvature condition from apparently weaker conditions. Then we take steps towards a classification of almost Hermitian 4-manifolds of class $\mathcal{AH}_1$, including proving a uniqueness result on 4-dimensional Lie algebras.

[1] K. Sekigawa, J. Ramanujan Math. Soc. **2**, (1987) 101-116.