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Abstracts of Short Communications and Posters

Section:

5. Differential Geometry and Global Analysis

1991 MS Classification: 53C15, 53C25, 58E20
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The Goldberg Conjecture is true for the four-dimensional total space of an almost Hermitian submersion.
In 1961, S. I. Goldberg conjectured that a compact, Einstein, almost Kähler manifold is Kähler. K. Sekigawa showed, in 1991, that the conjecture is true for non-negative scalar curvature. We prove that every almost Hermitian submersion from a four-dimensional, Einstein almost Kähler manifold is a totally geodesic mapping. Hence, such a manifold is, at least locally, the Kähler product of the Kähler fibres and the Kähler base space. Therefore, the Goldberg Conjecture is true for the four-dimensional total space of an almost Hermitian submersion for any sign of the scalar curvature.