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Chen's inequalities in generalized space forms

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Abstract

Generalized complex space forms were introduced as a natural generalization of complex space forms, and many authors studied them and their submanifolds. One main reference concerning these spaces is [4], in which F. Tricerri and L. Vanhecke established an important obstruction for their existence in dimensions greater than or equal to 6: in these dimensions a generalized complex space form reduces to a complex space form. Nevertheless, Z. Olszak provided some interesting examples of 4-dimensional generalized complex space forms with non-constant functions in [3].

More recently, P. Alegre, D. E. Blair and A. Carriazo introduced the notion of generalized Sasakian space form in [1]. In that paper, they gave some procedures to construct interesting examples by using warped products and conformal changes of metric.

In this talk, we will present sharp inequalities involving δ -invariants for submanifolds in both generalized complex space forms and generalized Sasakian space forms, with arbitrary codimension. In fact, δ -invariants, introduced by B.-Y. Chen in [2], have proven to be a key tool in Submanifolds Theory, providing new very useful information concerning the immersion problem.

References

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