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**INTEGRABILITY OF DISTRIBUTIONS IN GCR-LIGHTLIKE
SUBMANIFOLDS OF GOLDEN SEMI-RIEMANNIAN
MANIFOLDS**

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ABSTRACT

In this paper, we find necessary and sufficient conditions for the integrability of various distributions of GCR-lightlike submanifolds of golden semi-Riemannian manifolds and give an example of such submanifolds.

REFERENCES

- [1] M. Crasmareanu and C. E. Hretcanu, Golden differential geometry, Chaos, Solitons and Fractals, 38(5), 1229-1238 (2008).
- [2] M. Crasmareanu and C. E. Hretcanu, Applications of the Golden Ratio on Riemannian Manifolds, Turkish J. Math. 33(2), 179-191 (2009).
- [3] K. L. Duggal and A. Bejancu, Lightlike Submanifolds of Semi-Riemannian Manifolds and Its Applications, Kluwer Academic, (1996).
- [4] K. L. Duggal and B. Şahin, Generalized Cauchy Riemann Lightlike Submanifolds, Acta Math. Hungar., 112(1-2), 107-130 (2006).
- [5] K. L. Duggal and B. Şahin, Differential Geometry of Lightlike Submanifolds, Birkhauser, (2010).
- [6] F. E. Erdoğan and C. Yıldırım, Semi-invariant submanifolds of Golden Riemannian manifolds, AIP Conference Proceedings 1833, 020044, doi: 10.1063/1.4981692 (2017).
- [7] A. Gezer, N. Cengiz, and A. Salimov, On integrability of Golden Riemannian structures, Turkish J. Math. 37, 693-703 (2013).
- [8] R. Kumar, S. Kumar and R. K. Nagaich, Integrability of Distributions in GCR-lightlike submanifolds of Indefinite Kaehler Manifolds, Commun. Korean Math. Soc., 27(3), 591-602

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(2012).

[9] N. Önen Poyraz and E. Yaşar, Lightlike Hypersurfaces of a Golden semi-Riemannian Manifold, *Mediterr. J. Math.*, 14:204 (2017).

[10] B. Şahin and M. A. Akyol, Golden maps between Golden Riemannian manifolds and constancy of certain maps, *Math. Commun.* 19, 333-342 (2014).

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