

# On the construction of gradient Ricci soliton warped product

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## Resumo/Abstract:

In this paper we show that an expanding or steady gradient Ricci soliton warped product  $B^n \times_f F^m$ ,  $m > 1$ , whose warping function  $f$  reaches both maximum and minimum must be a Riemannian product. Moreover, we present a necessary and sufficient condition for constructing a gradient Ricci soliton warped product. As an application, we present a new class of complete expanding Ricci soliton warped product having as fiber an Einstein manifold with non-positive scalar curvature. We also discuss some obstructions to this construction, especially in the case when the base of the warped product is compact.

## References

- [1] F.E.S. FEITOSA, A.A. FREITAS, J.N.V. GOMES, *On the construction of gradient Ricci soliton warped product*, arXiv:1506.00342v3 [math.DG]