

Conformal submersions with totally umbilical fibers

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Session: 12. Geometry and Topology of Manifolds

Conformal submersions with totally umbilical fibers are a natural generalisation of Riemannian submersions with totally geodesic fibers [1]. We show how relations between curvatures of the domain and the image of a conformal submersion with totally umbilical fibers yield some obstructions to existence of such mappings [2]. Also, examples of conformal submersions with totally umbilical fibers will be presented and a correspondence between them and Riemannian submersions with totally geodesic fibers will be discussed.

References

- [1] R. H. Escobales Jr, *Riemannian submersions with totally geodesic fibers*, Journal of Differential Geometry, Vol. 10.2, 1975, 253–276.
- [2] T. Zawadzki, *Existence conditions for conformal submersions with totally umbilical fibers*, Differential Geometry and its Applications, 2014, <http://dx.doi.org/10.1016/j.difgeo.2014.01.010>.