Totally geodesic submanifolds in Robertson-Walker spaces with flat fibers

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We determine all totally geodesic submanifolds of Robertson-Walker spaces $-I \times_f \mathbb{R}^n$. We write down the differential equations for a totally geodesic submanifold of such a space and, in the nontrivial case $f' \neq 0$, we derive the necessary condition for the function f. We solve explicitly the corresponding systems of equations.

References

[1] Z. Dušek, M. Ortega, *Totally geodesic submanifolds in Robertson-Walker spaces with flat fibers*, in preparation.