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Addendum to:

Riemannian submersions of open manifolds which are flat at infinity

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As a corollary of our main Theorem A of [M]

Theorem A. *If the space M^n of a Riemannian submersion $\pi : M^n \to B^{n-k}$ is flat at infinity, and the base B^{n-k} is compact, then the manifold B^{n-k} is flat.*

we obtain the following "Topological gap phenomenon" (Theorem B of [M]):

Theorem B. *Let M^n be a complete Riemannian manifold of non-negative curvature. If the curvature goes to zero at infinity then the soul S of M^n is flat. In particular, this implies that if M^n is simply connected then it is diffeomorphic to the euclidean space of the same dimension.*

The same result was published earlier in [GP, Theorem 1.1] where it was obtained by different means.

References

[GP] L. Guijarro and P. Petersen, Rigidity in non-negative curvature. *Ann. Sci. Éc. Norm. Supér.*, IV. Sér. **30** (5) (1997), 595–603.

[M] V. Marenich, Riemannian submersions of open mahifolds which are flat at infinity, *Commentarii Math. Helv.* **74** (3) (1999), 419–441.

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