

# On the fundamental group of a complete globally hyperbolic Lorentzian manifold with a lower bound for the curvature tensor

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## ABSTRACT

*Calabi and Markus proved that any complete Lorentzian manifold with positive constant curvature of dimension greater than 2 has a finite fundamental group. Kobayashi asked whether the finiteness of the fundamental group still holds if we perturb the metric of positive constant curvature, and proposed a certain conjecture. We reformulate Kobayashi's conjecture for the Lorentzian case under certain curvature constraints. Moreover we state and prove a theorem ([1]) on certain classes of Lorentzian products with the fiber compact, which is a partial solution of the reformulated conjecture.*

## References

- [1] J. Mukuno *On the fundamental group of a complete globally hyperbolic Lorentzian manifold with a lower bound for the curvature tensor*, *Differ. Geom. Appl.*, **41** (2015), 33–38.