# Geometry Seminar

# Besse's conjecture: a new geometric point of view

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Time: 10:30 am

Acesso à sala virtual:

**Abstract**. We call CPE metrics the critical points of the total scalar curvature functional restricted to the space of metrics with constant scalar curvature of unitary volume. In this talk, we give a necessary and sufficient condition for a CPE metric to be Einstein in terms of $\sigma_2$-singular spaces. Such a result improves our understanding about CPE metrics and Besse's conjecture with a new geometric point of view. Moreover, we prove that the CPE condition can be replaced by the related vacuum static space condition to characterize closed Einstein manifolds in terms of $\sigma_2$-singular spaces.

# References

[1] ANDRADE, M. On the interplay between CPE metrics, vacuum static spaces and $\sigma_2$-singular space. Archiv der Mathematik volume 117, pages 687–695 (2021).