

# Volume growth for geodesic balls of static vacuum space on 3-manifolds

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**Abstract.** The purpose of this article is to study the geometry of static space–times. We show that the energy density and pressure vanish on the boundary of a perfect fluid space–time, provided that it satisfies a suitable condition. Moreover, we provide an upper bound volume growth for geodesic balls of the base of static vacuum space similar to a classical result due to Bishop. In addition, we derive a weak version of the maximum principle of Omori-Yau at infinity for such spaces. **Joint work with:** H.Pina & E. Ribeiro Jr.

## References

- [1] B. Leandro, H. Pina & E. Ribeiro Jr - *Volume growth for geodesic balls of static vacuum space on 3-manifolds*. Annali di Matematica Pura ed Applicata (2019). doi.org/10.1007/s10231-019-00904-2