



DYNAMICAL SYSTEMS SEMINAR

On the embeddability of the homogeneous Ricci flow and its collapses

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Abstract. This article grew out of the urge to realize explicit examples of solutions for the Ricci flow as families of isometrically embedded submanifolds, together with its Gromov-Hausdorff collapses. To this aim, we consider the Ricci flow of invariant metrics in a class of flag manifolds.

On the one hand, we contrast with a previous result in literature by presenting entire flow lines of invariant metrics realized as orbits of a fixed representation. Indeed, we prove that the subset of realizable metrics has a global attractor with open interior, containing an expressive family of complete flow lines. On the other hand, we prove that certain collapses cannot be realized in any fixed Euclidean space.

We provide a detailed picture of the flow, including examples of both realizable and non-realizable flow lines and collapses.

This is Joint work with M. Patrão (UnB) and L. Sperança (Unifesp)

References

- [1] M. Patrão, L. Seco, L. Sperança: *On the embeddability of the homogeneous Ricci flow and its collapses* (2021) submitted.
- [2] L. Grama, R. Martins, M. Patrão, L. Seco, L. Sperança: *The projected homogeneous Ricci flow and three-isotropy-summands flag manifolds* (2021) submitted.
- [3] J. D. Moore and R. Schlafly: *On equivariant isometric embeddings*, *Mathematische Zeitschrift*, 173 (1980) 119–133.
- [4] M. Safdari: *An example of non-embeddability of the Ricci flow*, *Annals of Global Analysis and Geometry*, 55 (2019) 681–685.