

# spinifex: An R Package for Creating a Manual Tour of Low-dimensional Projections of Multivariate Data

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**Abstract** Dynamic low-dimensional linear projections of multivariate data collectively known as tours provide an important tool for exploring multivariate data and models. The R package *tourr* provides functions for several types of tours: grand, guided, little, local and frozen. Each of these can be viewed dynamically, or saved into a data object for animation. This paper describes a new package, *spinifex*, which provides a manual tour of multivariate data where the projection coefficient of a single variable is controlled. The variable is rotated fully into the projection, or completely out of the projection. The resulting sequence of projections can be displayed as an animation, with functions from either the *plotly* or *gganimate* packages. By varying the coefficient of a single variable, it is possible to explore the sensitivity of structure in the projection to that variable. This is particularly useful when used with a projection pursuit guided tour to simplify and understand the solution. The use of the manual tour is applied particle physics data to illustrate the sensitivity of structure in a projection to specific variable contributions.

@CRANpkg(spinifex)

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