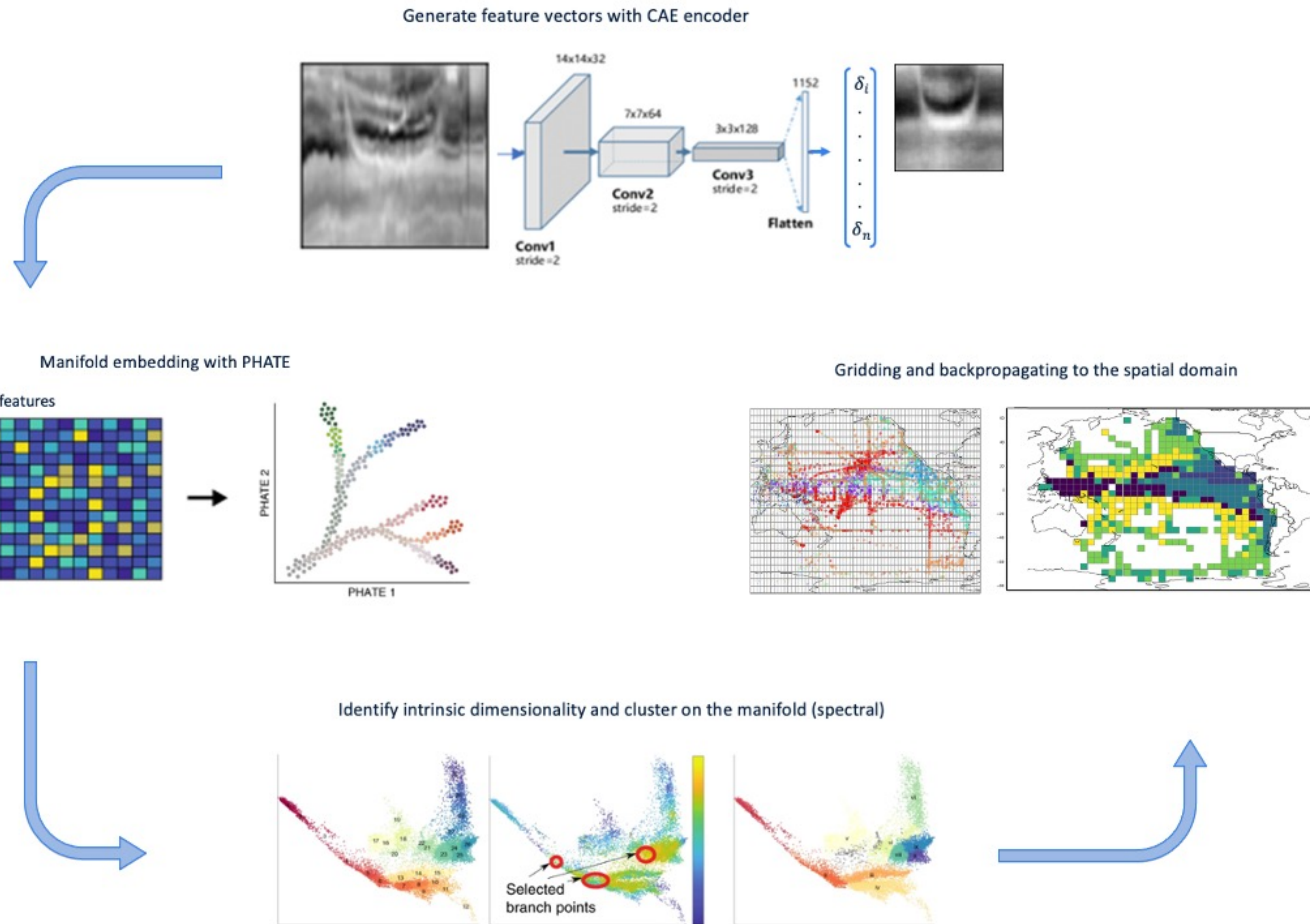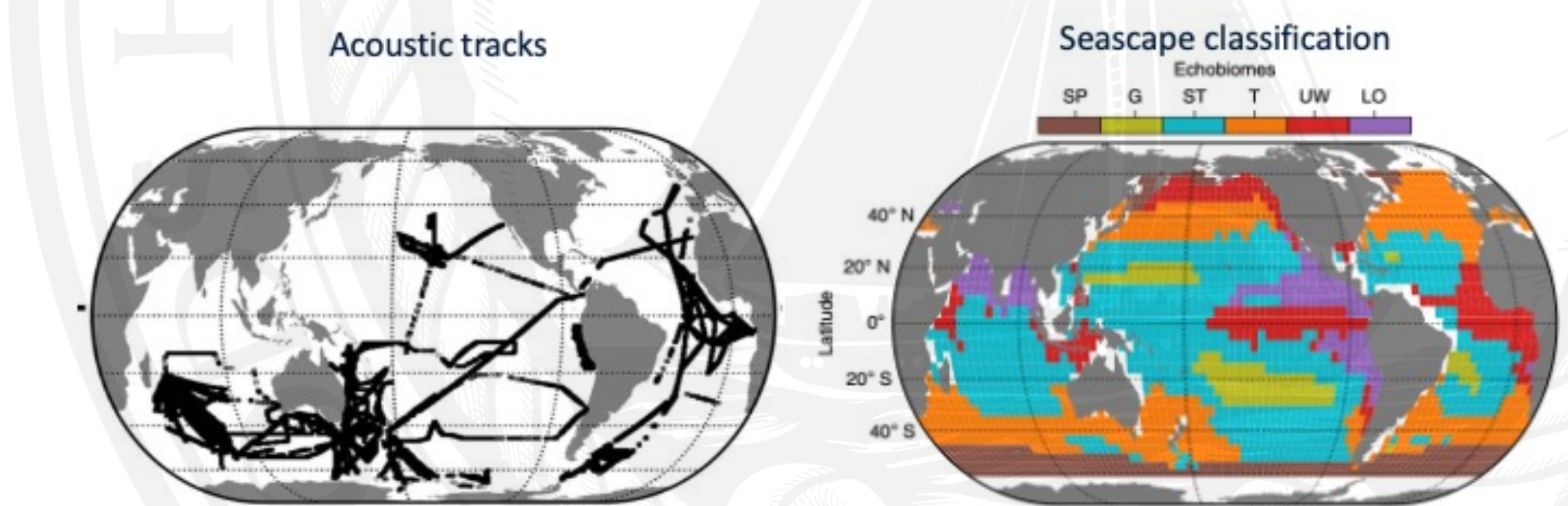# Acoustic classification with image-based machine learning

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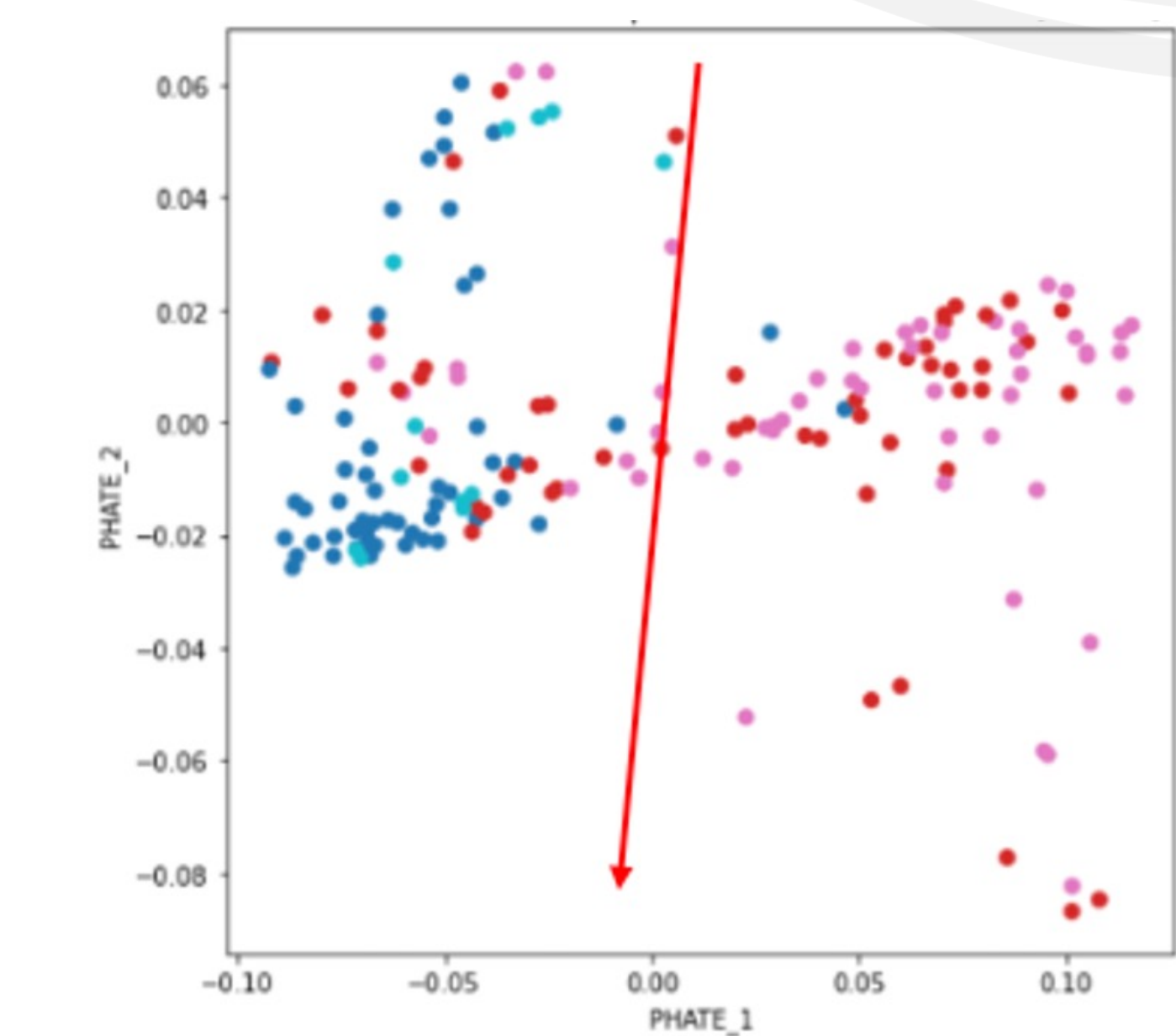
## Acoustic seascape classification algorithm



Generate feature vectors with CAE encoder

Manifold embedding with PHATE

Gridding and backpropagating to the spatial domain

Identify intrinsic dimensionality and cluster on the manifold (spectral)

Selected branch points

a. Data coverage and bias

b. Polar seasonality

c. Ecological impacts