K-means clustering of Argo profiles for identifying circulation patterns

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A k-means clustering of Argo profiles is performed. By using the signature of each data sequence as the coordinate system for feature space, major ocean ciculation patterns are better represented with distinct clusters, than by using conventional Temperature and Salinity coordinate. We will discuss why the signature, which is a key cencept in rough path theory, is relevant to representing a profile. Implications for its usage in data assimilation will also be discussed.

Keywords: k-means method, Argo, signature

