Dynamical objects governing transport processes in the Arctic Ocean.

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In this presentation we discuss transport processes in the Arctic Ocean from a Lagrangian perspective. We focus our analysis on the Beaufort Sea in the halocline (top 30 meters depth). We apply the methodology of Lagrangian descriptors [1,2,3], using the function M, on the velocity field dataset provided by the Copernicus Marine Environment Monitoring Service over the time period ranging from March 2013 to March 2015. The Lagrangian descriptor highlights large-scale persistent dynamical structures related to mathematical objects such as hyperbolic trajectories and their invariant manifolds which determine a transport barrier which mantains the salinity gradient between the Canadian basin and the Pacific waters [4].

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