



20 years of reprocessed Lyapunov Exponents from altimetry available on AVISO+

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Altimetry-derived maps of Lyapunov exponents (LEs) provide proxies of (sub-)mesoscale transport fronts. They are being increasingly used in physical, biogeochemical, and ecological applications, ranging from real-time support to field studies to co-localisation of animal tracking with Lagrangian Coherent Structures. Their calculation however is more complex than standard Eulerian diagnostics, because it requires a Lagrangian algorithms which integrates the velocity field. During the past 20 years, in parallel with the altimeter measurement Level2 (a.k.a [O/I]GDR) to Level3 and Level4 (along-track cross-calibrated SLA, and multiple sensor merged maps) processing, different applications and derivated Level4+ products were developed by AVISO+. In order to better serve the users need, and in collaboration with different laboratories (LOCEAN and CTOH), the LEs and vectors are computed over the 21-year altimeter period and over the global ocean within the SSALTO/DUACS project. This product provides the position, and intensity, and orientation of fronts induced by the mesoscale eddies and underlining part of sub-mesoscale activity. We present here the Lyapunov products that will be available on AVISO+ early 2015, and some examples of applications.