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On the seasonality of eddies in the Western Mediterranean Sea: answers with altimetry and modeling.

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Eighteen years of weekly SLA merged maps in the Western Mediterranean are analyzed using the new method proposed by Chelton et al. (2011) to identify and track mesoscale eddies. The method has been adapted to take into account the specificity of the Mediterranean basin. Results are similar to the global ocean results with a radius smaller due to a smaller Rossby radius. The areas of intense rotational speed and amplitude of eddies are similar to the areas of intense eddy kinetic energy calculated from altimetry sea level anomalies. Eddies propagation speed shows a wide range of values without a clear preferred direction. Nevertheless, eddies seems to propagate following the main currents. Temporal analysis of the number of eddies per day is made focusing on the annual and semi-annual variability. This annual and semi-annual cycle is analyzed using a regional model of the Mediterranean Sea and studying the interaction with atmospheric forcings.