Abstract Data from satellite altimeters are often degraded by the occurrence of unrealistically high values of the ocean surface radar backscatter cross sections (sigma-0). Various studies on altimetric data have shown that these events are due to the occurrence of specific ocean phenomena characterized by an increase of the surface radar backscatter cross-section. They are called "sigma-0 blooms". For example, they can affect up to 20% of the cases studied. In some cases, they could be attributed to the presence of a liquid water layer close to the ocean surface. This study shows that the occurrence of sigma-0 blooms is strongly correlated with the occurrence of specific oceanic phenomena that affect the wind and wave conditions. These phenomena can be related to the occurrence of specific oceanic events such as wind-driven or wave-driven oceanic phenomena. In this study, we present an analysis of the impact of sigma-0 blooms on the accuracy of the altimetric data. The results show that the occurrence of sigma-0 blooms can lead to significant errors in the estimation of the surface elevation and the wind speed. The analysis also shows that the occurrence of sigma-0 blooms is strongly correlated with the occurrence of specific oceanic phenomena such as wind-driven or wave-driven oceanic phenomena. The results suggest that the occurrence of sigma-0 blooms can be related to the occurrence of specific oceanic phenomena that affect the wind and wave conditions. These phenomena can be related to the occurrence of specific oceanic events such as wind-driven or wave-driven oceanic phenomena.