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Marine geomorphometry: Overview and opportunities.

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Multibeam echosounder data comprise the primary source for digital terrain models of the seafloor. Recent advances in seafloor surveying technologies have resulted in a dramatic increase in the quantity and resolution of multibeam echosounder data, prompting a renewed interest in employing geomorphometric techniques to investigate the seafloor. Marine geomorphometric techniques are not as varied and as extensively applied as in terrestrial environments. This is due to the difficultly with capturing terrain variability underwater, since changes in topography are more subdued in comparison to terrestrial landscapes. Issues related to scale are also relevant in submarine settings, but they manifest themselves differently due to the differences in input data. In the last decade, a suite of marine geomorphometric techniques have been developed - terrain attributes, feature-based quantitative representation, automated classification - and employed to investigate a wide range of phenomena – seafloor landforms and geomorphic processes, geohazards, hydrodynamics, habitats. This contribution provides an overview of progress made in marine geomorphometry in the last decade as well as highlights the opportunities and challenges faced by this thriving field of research in the near future.