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	Sommario/riassunto	Large scale optical mapping methods are in great demand among scientists who study different aspects of the seabed, and have been fostered by impressive advances in the capabilities of underwater robots in gathering optical data from the seafloor. Cost and weight constraints mean that low-cost ROVs usually have a very limited number of sensors. When a low-cost robot carries out a seafloor survey using a down-looking camera, it usually follows a predefined trajectory that provides several non time-consecutive overlapping image pairs. Finding these pairs (a process known as topology estimation) is indispensable to obtaining globally consistent mosaics and accurate trajectory estimates, which are necessary for a global view of the surveyed area, especially when optical sensors are the only data source. This book contributes to the state-of-art in large area image mosaicing methods for underwater surveys using low-cost vehicles equipped with

a very limited sensor suite. The main focus has been on global alignment and fast topology estimation, which are the most challenging steps in creating large area image mosaics. This book is intended to emphasise the importance of the topology estimation problem and to present different solutions using interdisciplinary approaches opening a way to further develop new strategies and methodologies. .