

“Mapping the Global Submarine Cable Network: New Data on Topology, Capacity, and Vulnerability”

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We build a new global dataset on submarine cable topology, redundancy, and capacity for 2010–2025. Capacity has risen exponentially while the network’s geography has remained mostly unchanged. Redundancy and capacity are still uneven and percolation analysis reveals persistent fragility across much of the world. Centrality and inter centrality measures indicate that a small cluster of hubs in the MENA–South Asia corridor increasingly anchors global connectivity, with major implications for Africa, Europe, and the Middle East/South Asia, whereas the Americas and most of Asia remain largely insulated. Using seafloor topology, we quantify exposure to sabotage and show vulnerability correlates with network centrality.