Deep Marine Systems: Processes, Deposits, Environments, Tectonics and Sedimentation

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DESKTOPRICATION

Deep-water (below wave base) processes, although generally hidden from view, shape the sedimentary record of more than 65% of the Earth’s surface, including large parts of ancient mountain belts. This book aims to inform advanced-level undergraduate and postgraduate students, and professional Earth scientists with interests in physical oceanography and hydrocarbon exploration and production, about many of the important physical aspects of deep-water (mainly deep-marine) systems. The authors consider transport and deposition in the deep sea, trace-fossil assemblages, and facies stacking patterns as an archive of the underlying controls on deposit architecture (e.g., seismicity, climate change, autocyclicity). Topics include modern and ancient deep-water sedimentary environments, tectonic settings, and how basinal and extra-basinal processes generate the typical characteristics of basin slopes, submarine canyons, contourite mounds and drifts, submarine fans, basin floors and abyssal plains.

ABOUT THE AUTHOR

Kevin T. Pickering is Professor of Sedimentology & Stratigraphy in the Department of Earth Sciences at University College London, U.K. He has published ~140 peer-reviewed papers, co-authored 6 books and edited 3 books on aspects of deep-water sediments and global environmental issues. He managed the industry-sponsored Ainsa Project, an integrated outcrop-subsurface drilling project to understand deep-marine channels in the Spanish Pyrenees, and has sailed on four international scientific drilling expeditions (DSDP, ODP, IODP). In 2010, in recognition of his research, Pickering was elected as a Fellow of the Geological Society of America.
Richard N. Hiscott is an Emeritus Professor at Memorial University of Newfoundland, Canada. His 40 years of process-oriented research covers ancient deep-sea to alluvial facies of Proterozoic to Cretaceous age, four Ocean Drilling Program campaigns including Amazon submarine fan, Quaternary sedimentology of the Labrador Sea, Santa Monica Basin, and the Black Sea region including dynamics of the saline gravity current that enters the low-salinity Black Sea through the Bosphorus Strait.

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