Workshop IODP-Italia "Lo stato delle proposte di perforazione nell'area mediterranea"
Scientific Drilling in the Mediterranean Sea
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Abstract

I giovani ricercatori italiani nell'ambito dei programmi internazionali di perforazione scientifica

IODP references tool for sediment description: Technical Notes 1, 2, and 3

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Abstract

IODP Technical Notes 1, 2, and 3 provide crucial elements to shipboard sedimentologists to describe and analyze cored materials at microscopic and mesoscopic scales. Core visual analyses provide important information summarizing the nature of cored sediments and rocks. The smear-slide technique is critical to microscopic characterization of unlithified fine-grained sediments and the determination of lithologic names both in the laboratory and the classroom. Mastery of the techniques requires sedimentologists to have sufficient experience in cores descriptions, optical mineralogy, sedimentary petrography, and micropaleontology to identify sedimentary and tectonic structure as well as individual sediment components. Unfortunately, cores repositories accessibility is limited and microscopy training in many academic programs is on the decline or has been dropped from the curriculum entirely. We have created a compendium of core images and a self-instructive module on smear-slide preparation, description, and interpretation for use by sedimentologists. Through funding by IODP-MI we have completed Technical Note 1 (atlas of siliciclastic and volcaniclastic components), Technical Note 2 (atlas of biogenic components), and Technical Note 3 (ODP core photo atlas). These modules are in the form of layered, interactive PDF files constructed with Adobe InDesign. Text includes notes from on board scientists and a

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rationale for where and when to do a smear slide in core description; techniques for how to make a smear slide; description of and data collection for smear slides, including strategies for estimating percentages; and basic caveats of smear vs. thin-section description of components. Close up photographs from ODP expeditions show multiple examples of lithologies, sedimentary structures, tectonic structures, trace fossils, and drilling deformation features. Atlas of high-resolution images of mud fractions from International Ocean Discovery Program core samples is searchable and includes individual siliciclastic, volcaniclastic, and biogenic components as well as mixtures of these components. Images in plane-light and crossed-polar views have scale grids and detailed figure captions; they are organized and grouped with thumbnail summaries and hyperlinked for flexible browsing.

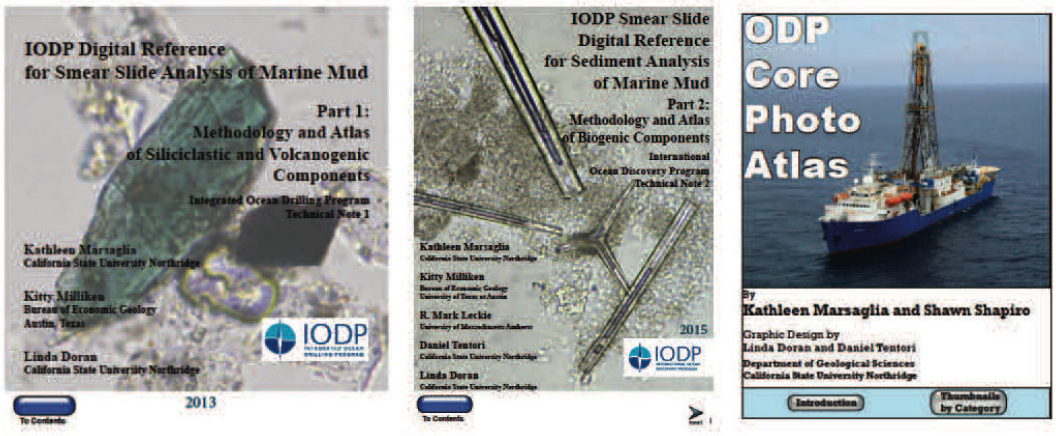

Fig. 1 - Technical notes 1,2, and 3 front pages.