A Poor-Man's automated portable XRF Core Scanner at LDEO

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Several recent studies have demonstrated the usefulness for climate research of X-ray fluorescence (XRF) measured at mm- to cm-scale resolution to reconstruct variations in deep sea sediment composition. The premise of this proposal is that for many applications, it would be more effective to have an easily accessible in-house poor man's XRF core scanner even if it doesn't have to offer quite the same sensitivity or spatial resolution as an expensive commercial system. We believe this could be achieved at a modest cost by combining the Core Lab's Multi Sensor Core Logger (MSCL) with a hand-held XRF scanner manufactured by Innov-X Systems. An even more portable package could be created by combining and automating a manual core scanner designed by JLM for measuring diffuse spectral reflectance at mm-scale resolution in laminated sediments.