



Compilation of marine trackline data of the world I - cleaning of the GEODAS data set

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The use of marine proton magnetometers provides precise magnetic data, and eliminates the problem of stability on the platform in measurement (i.e. fluxgate sensor limitation). This information, which exists on a worldwide scale, has been available since the 1960's. Global dataset (i.e.: GEODAS) provides a great amount of historical data but usually with incomplete correction, mainly: no extraction of external field contribution, and no application of accurate reference field model. Nevertheless this data, once visualize, suggests that we have at our disposal a much more useful product than we could 'a priori' expect. Additionally, a new opportunity is offered with the appearance of the "comprehensive model" (CM4), developed in order to overcome the problem of separation of spatial as well as temporal variations from observed magnetic field at ground, and satellite levels. The IAGA Task Group for the World Digital Magnetic Anomaly Map (WDMAM) appears as a consequence of an initiative that tries to get a reliable magnetic global compilation which initially focused on trying to get a coherent world magnetic anomaly map at 5 km of altitude using all near-surface (aeromagnetic and marine surveys) data plus satellite and oceanic models. This should provide to the scientific community a first class tool to access on subsurface geology. The second version of the WDMAM is underway and will try to include among other new issues, new marine data, as well as old marine data where a careful check of the total-field measurements along each trackline has been performed to improve its quality as far as possible. Particularly the later issue means that a total of 2252 marine cruises (which cover a widespread time frame that goes from 1960 to 2002)

have been checked . Such a huge task obliged us to separate world marine areas in geographical frames: North Atlantic, South Atlantic, Indian and Pacific ocean setting areas of responsibility. An accurate checking of each resulting new anomaly values (after CM4 model application) were performed track by track, it means: removing isolated spikes, constant shift correction wherever evident, bad tracklines removing when values were out of Earth Magnetic field's range, reducing noise level by spatial filtering, and finally we have perform an internal control by cross checking the areas of responsibility. This communication treats about this new marine magnetic dataset. We will explain our results, criteria followed, difficulties found and lessons learned along the process.