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Shengqing Xiong

Aero Geophysical Survey and Remote Sensing Center for Land and Resources, China

Geological structures of continental China reviewed by aeromagnetic data

Using the most advanced method of processing and mapping, the compilation of 1:1000000 series of China land aeromagnetic map has provided high quality fundamental materials of regional geophysics for the research of regional geological structures in our country, which innovates a lot upon mapping of regional aeromagnetic and geological structures, data processing technology, interpretation method and recognition of geological structures etc, also promotes the progress of scientific and technology in related field. Based on about 120000 depth data of magnetic body calculated by surveyed magnetic materials, the depth map of China land magnetic basement was compiled. We carried out research on characteristic of China land rugged magnetic basement, especially the distribution of depression and uplift, and the depth and current status of the sedimentary cover layer, which provided reference materials for the study of regional structures and prognosis of oil-gas exploration target area in China. Depending on the magnetic data, and combining the comprehensive research of gravity, geology and remote sensing data etc, we compiled distribution map of 1:2500000 China land fault and magnetic rocks, regional structure map (fig1) and series of interpretation map of geological structures, and then established the framework of fault structures; found many new faults; delineated concealed and half concealed magnetic rock body; characterized regional structural unit and its boundary; clearly illustrated the characteristics of basal lithofacies structure; evaluated the stability of basement; discussed the characteristics of deep magnetic structure and depth of magnetic layer. These maps will give blueprint for the work of geosciences and benefit a lot to the study of framework. The first aeromagnetic-geological structure maps of continental China, has significantly important reference value for the analysis of regional structures, geological background of oil-gas and mineral resources formation, the evaluation of geological environment, geological disaster and development of geosciences theory.

Biography

Shengqing Xiong is presently working as a Chief Geoscientist at the Aero Geophysical Survey & Remote Sensing Center for Land & Resources, China. His research interests are in the areas of Aero Geophysics and Remote Sensing.

xsq@agrs.cn

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